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It has been brought to the attention of the Editor that in the excavation report on Rudston Barrow LXII in Volume 44 of the *Journal*, Section IV (Human and Animal Bones) was written by Miss R. Powers, British Museum (Natural History).

* * * * *

The Editor wishes to remind intending contributors that much time can be saved if they will obtain from him a copy of the conventions used in the *Journal*, well before their material is ready for submission.

* * * * *

The Society wishes it to be understood that responsibility for opinions and material contained in articles, notes and reviews is that of their authors alone, to whom any resulting correspondence should be addressed.

A MESOLITHIC FLINTSITE: THE SANDBEDS, OTLEY, YORKSHIRE

By E. T. Cowling

The old town of Otley owed its origin to the ford northwards across the river Wharfe now marked by a medieval bridge. To the east and west of this crossing the town is bounded by alluvial plains, the remnants of post-glacial lakes. The lake to the east was some four miles long, with islands and a long arm at the confluence of the rivers Wharfe and Washburn, and the greatest breadth was about five furlongs. This lake was bounded to the north by a terrace running east and west, which rises to a height of 18 ft. at the south side of the wood at the east end of Wharfemeadows Park. To the east, past the boundary wall, it falls to a height varying from nine to three ft. Flints have been noticed in the molehills above the terrace on many occasions and in 1966, when the land was put under the plough, many artifacts of stone were turned up.

The area productive of artifacts is bounded by the river terrace for about 1,000 yards; to the north, the slopes yielding flints form a belt 250 yards wide. Scattered flints have been found over the whole of this area but as it was formerly covered by the rig and furrow of medieval ploughing and is again under arable cultivation, this is to be expected. Some trowelling has been done, but because of soil creep, excavation does not promise to be rewarding. Practically all the finds are from the surface and, because of arable disturbance, dating by stratification, carbon 14 or biological analysis does not seem to be possible.

Owing to the intermittent searching, limited each season to the interval between ploughing and sowing, it has taken four years to realise that the finds are concentrated in four main sites:–

Site 1. (Nat. Grid Ref. SE 209462; height of terrace 175 ft. O.D.). To the east of the boundary wall, a short length of terrace has been overrun by the plough and spread over the river plain in a slight slope. A slight natural hollow marked the slope 334 yards east of the boundary wall and here the plough revealed cores, tools and small blades of white flint.

Site 2. To the east, at 634 yards, the terrace rises to a slight hillock, where cores, tools and waste of white and coloured flint have been found.

Site 3. Just to the north, on a slight slope, cores, tools and worked artifacts appeared, all of chert, mostly black.

Site 4. Some 830 yards east of the boundary wall, the brow of the spur above the terrace yielded many cores, tools, flakes and blades of white and coloured flint. The white flint artifacts from here are larger than the average for the whole area.

RAW MATERIALS

Yorkshire Wold Flint

The raw materials of the Sandbeds are varied and from widely differing sources. The finds, 5417 in number, are 78% of flint of Yorkshire Wold origin, from about 50 miles east of Mid-Wharfedale across the Plain of York. This flint varies but is usually opaque, dull and off-white in colour and often has cherty inclusions and a thick cortex. On the Sandbeds, three varieties may be discerned.

1. A dull white flint, of chalky appearance, often with a buff or yellow tinge, this flint is liable to shatter, the flakes are short and stumpy and often do not show bulbs of percussion. The source is boulder with a shiny white cortex overlying a pimply surface.

2. A bright white flint merging to a skim-milk blue, with a light brown cortex, the most serviceable of the Wold flints.

3. A small pebble giving flakes of white flint; the cortex is granular and off-white in colour.

There are several tools made from inferior flint, which appears to be Wold tabular flint; these are dirty white, yellow or buff in appearance. The general whitish colour of Wold flint is often attributed to patination, but breakages show the same colour throughout; patination seems to increase the chalky appearance of some. Flints are thick on the fields of the Wolds today and seams of boulder and tabular flint are to be seen where streams or railways have cut channels.

East Coast Drift Flint

11% of the raw material from the Sandbeds is from small boulders or pebbles of the glacial remains overlying parts of the East Riding of Yorkshire and North Lincolnshire. Erosion covers the sands of the East Coast of Yorkshire from Redcar to Spurn Point with these flints. The worked flints have a bright appearance and vary in colour; grey, often mottled, predominates, black and brown merge with yellow, and there is the odd pink or chocolate specimen. This flint is the source of the majority of the blades that are found. On the Sandbeds a small number of artifacts have a thick white patination but breakages reveal an interior of East Coast Drift flint. These must be the result of early chance finds of East Coast Drift flint by the users of Wold flint, and its use and patination on the site.

Local Drift

The glacial drift of Mid-Wharfedale accounts for the remaining 11% of the raw material. Chert is in the greatest proportion and varies greatly; there is black, brown, grey, all with sandy inclusions, black is banded with brown or green, and odd pieces have a pink or blue cast. Under this general heading are artifacts of cannel coal, shale, quartzite, dolerite and other igneous stones. All this material flakes badly and finds are often limited to rough tools and waster cores. All these differing materials are to be found in the bed of the river Wharfe or those of nearby streams. It is evident that they are glacial debris from the headwaters of the river in the Pennines to the west. Such poor substance can only have been pressed into service during a scarcity of flint.

In the following descriptions, the above three raw materials will be referred to as Wold Flint, Drift Flint and Local Drift.

MATERIAL COLLECTED UP TO APRIL 1972

Classification	
Total number of Artifacts	5,417
Total Weight 42 lb. 7 oz.	
Raw Materials	
Yorkshire Wold Flint	4,228
East Coast Drift Flint	557
Local Drift, mainly chert	632
Waste Materials	
Cores	174
Blades, with a length ratio to width of 3 to 1	82
Chippings, less than 1 cm. in length	299
Cut or edge-trimmed flakes	70
By-Products	
Micro Burins	21
Graver Spalls	10
Core Rejuvenation Flakes	8
Implements	
Microliths	46
Scrapers	74

Gravers	275
Tranchet Axes	2
Axes	8
Awls	13
Knives	9
Serrated Flake	1

WASTE

Cores are 174 in number; when these are classified according to the number of their striking platforms we have the following analysis:–

1 striking platform	66
2 platforms at right-angles	14
2 platforms, divergent	21
2 platforms, parallel	30
3 platforms	3
indefinite	40

The number of platforms was affected by the nature of the flint; if workable, a single platform would be sufficient, if intractable, almost every facet could be struck. The cores show that the majority of the flakes detached were stubby or of the side-blow variety.

If the cores are described by the use to which they were put, we have:–

Core gravers	22
Core scrapers or planes	29
Cores with axe-like edges	6
Cores, indefinite	117

The only core tools shown in this assessment have battered or worked grips.

If assorted according to weight the figures are:–

	Wold flint	Drift flint	Local Drift
Under ½ oz.	31	14	8
,, 1 oz.	33	6	28
,, 1½ oz.	16	1	20
,, 2 oz.	3	0	6
,, 2½ oz.	0	0	2
,, 3 oz.	2	0	3
,, 3½ oz.	0	0	0
,, 4 oz.	0	0	1

Amongst the cores, 1:1 is a typical core graver, 1:2 is a core plane and 1:3 is a core with an axe-like edge.

Flakes which have been cut or edge-worked number 70; the majority of these are of the side-blow variety, with the greatest measurement across the breadth of the flake; in many cases one edge of the flake has been removed.

Blades are 82 in number; many have been truncated and several have both tip and bulb removed. A type which must be mentioned is where a blow has been struck along the edge of a striking platform to remove a long narrow blade with a steep triangular section. This would leave the core with an in-sloping edge, unsuitable for flaking; it appears that the purpose of the knapper was to obtain the required blade and not to trim the core. Blades of this kind were often worked to a point at each end, as in 1:4 and 5. Five small blades have been truncated by a single blow at one end and had the other end removed by the micro burin process. In two of these examples, 1:7 and 8, the break caused by notching has brought the end to a blunt point. Another blade has a second notch on the other edge, opposite the first, to give an awl-like point, 1:6.

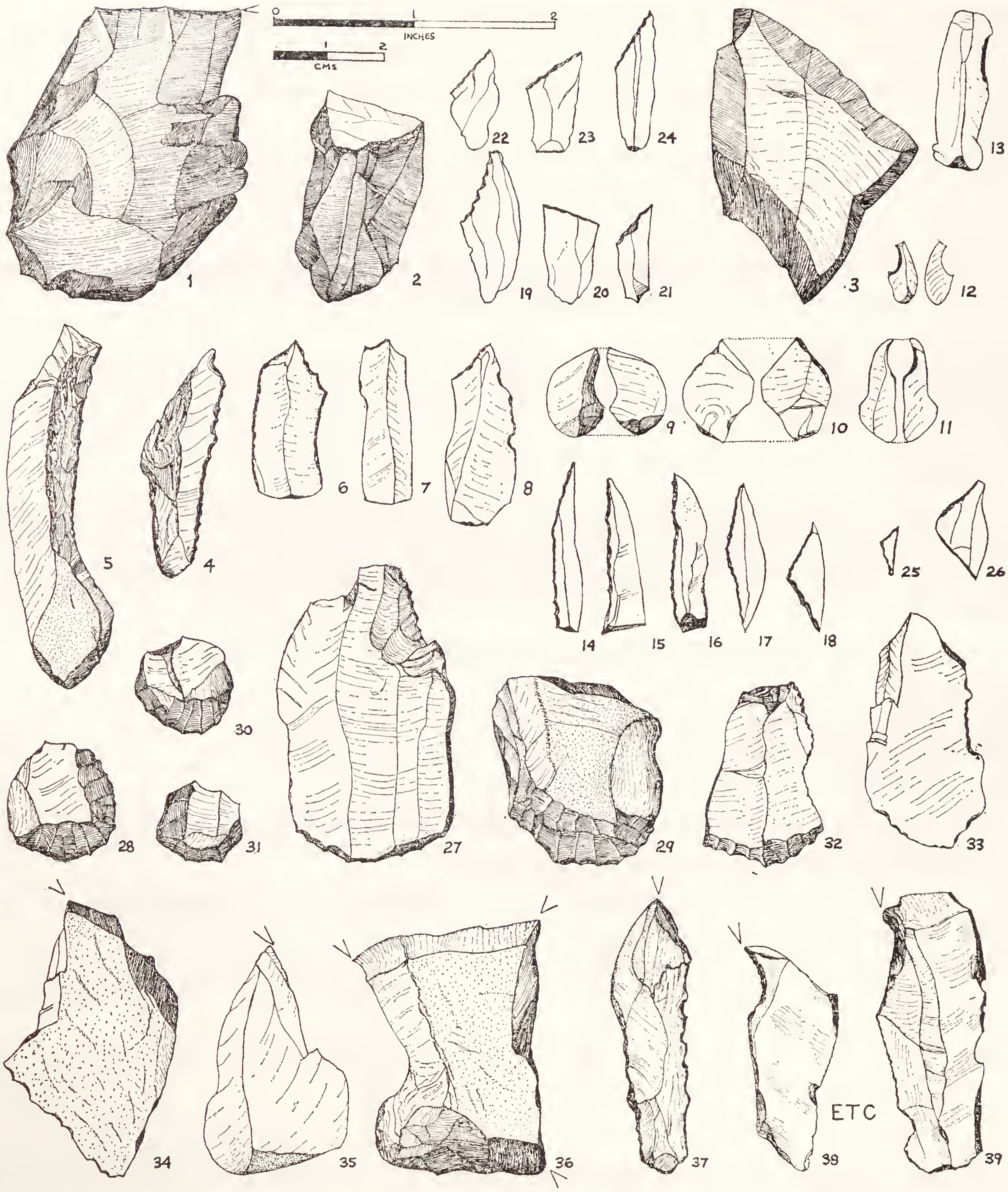

Fig. 1.

BY-PRODUCTS

Micro burins are 21 in number; of these all but one retain the bulb of percussion and the notch has been worked from the face of the blade. Two micro burins of Wold flint are shown in 1:9 and 10, two of Drift flint, 1:11 and 12 appear to be made from small fragments. One small blade, 1:13 has a notch worked below the bulb but has not received the detaching blow; it affords evidence that the micro-burin process was used for the making of blades suitable for the manufacture of microliths.

Graver spalls are few in number because of the difficult nature of the flint used locally. Many true gravers are made from side blow flakes and the semi-circular spalls detached are not easy to identify. The usual thin graver spalls ending in a hinge fracture are also scarce. Examination of single blow gravers, of which this type of graver spall is the waste product, reveals that the majority of such spalls end in a break

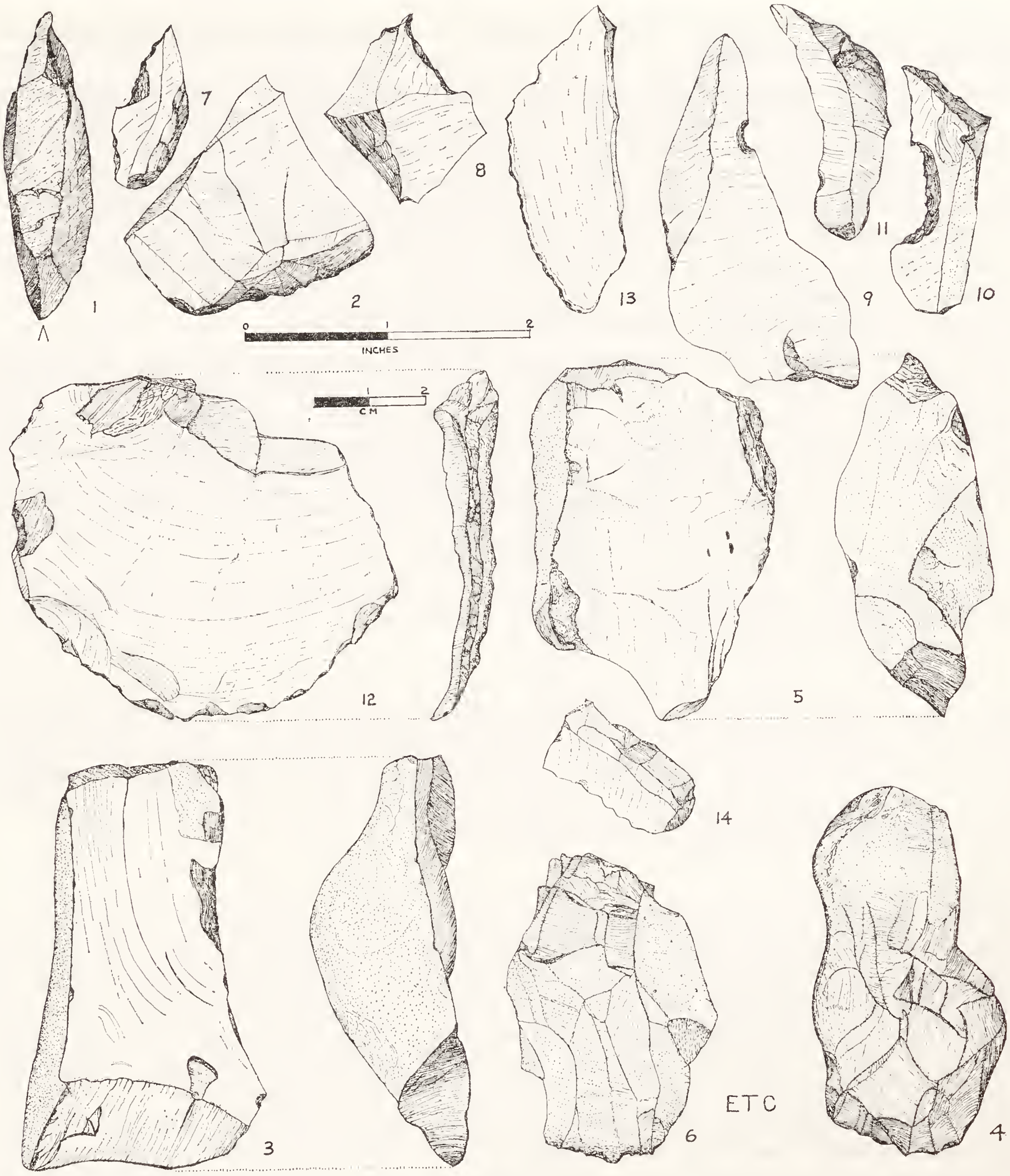

Fig. 2.

and not a hinge fracture. Many spalls are tiny and cannot be recognized amongst waste. Only ten good examples have been isolated.

Core rejuvenation flakes are indefinite, only six seem to be certainties, any such waste would be likely to use on this site.

IMPLEMENTS

Microliths. There are 46 microliths from the Sandbeds; 35, of Wold flint, are small non-geometric microliths trimmed along one edge to an acute point, two are crescents. Three of these acutely pointed microliths are shown in 1:14, 15 and 16; No. 14 has retouching across the base. A microlith with a point at each end is 1:17. Five small blades of Wold flint are obliquely trimmed across one end to make blunt points, as in 1:19, 20 and 21, four similar blades of Drift flint are worked in the same fashion to form obliquely blunted points, 1:22, 23 and 24. Three Wold flint microliths are triangles, two, 1:18 and 26 are blunted on the two shorter edges and 1:25 of small size, is blunted on all three edges.

Scrapers are 74 in number and comprise 1 double end, 14 end, 11 side, 35 horseshoe, 8 thumb, 3 hollow and 2 nose scrapers. This proportion is influenced by the prevalence of side-blow flakes, the material of the majority of scrapers, especially of the horseshoe type. The end scrapers show that when suitable flakes were available fine tools could be made. 1:27 is an end scraper made from a broad flake and for use in the left hand. A short thick scraper, 1:28 shows fluted flaking undercut by resolved flaking. 1:29 is a thin scraper with a sloping edge; a small core of conical shape, 1:30 has a scraper edge around the perimeter. One of the many thumb scrapers is seen in 1:31. 1:32 is an end scraper with an indented edge, a feature of some scrapers.

Gravers are numerous and vary in quality from fine examples to crude implements, they are 274 in number. It is noticeable that true gravers are often made from side-blow flakes and single-blow gravers are made on flakes or blades. Some gravers have as many as three working facets and show considerable skill in the provision of finger grips. 1:33 is a single-blow graver made from a buff coloured flake of Wold flint and shows the marks of three sharpenings. 1:34 is made from a flake of honey coloured flint and has been twice sharpened. A true graver of dense white flint, 1:35 has a well worked grip. 1:36 has three corners worked to true gravers and the fourth as a scraper. A polyhedral graver, 1:37 is of white flint and has three facets on one face of the cutting edge. A thick flake of ivory coloured Wold flint, 1:38 is an angle graver with a well-worked notch and grip.

1:39, a blade of yellow and brown flint, is notched below the shoulder at each end, graver blows struck transversely to make a double angle graver; both the edges are blunted along the entire length. 2:1 is a keeled flake of black igneous stone with a steep triangular section; the tip of the flake has been removed by a single blow to make a good graver and the edges blunted to make a grip. A true graver of dull white Wold flint, 2:2 has a grip fashioned for the right hand.

Axes

2:3 is a tranchet axe made from a thick side-blow flake of Wold flint. One face is of yellow-brown cortex and the inner face is of yellow merging to brown. The bulb of percussion has been struck off to give an axe-like shape and a tranchet blow made the cutting edge at the broader end. The whole tool only appears to have taken about 14 blows to shape, the corners of the cutting edge have been removed and the raw edges removed. A second tranchet axe seems to have been made by splitting a long cone-shaped core longitudinally and removing the tip by a tranchet blow. 2:4 is an axe made from a long pebble of dark green chert with sandy inclusions. The rounded face of the pebble forms one face of the axe and the other face is made by flaking back from the edge. An axe made from a thick side-blow flake of dirty white Wold flint with natural cavities, 2:5, is shaped like a thick wedge. One face is the rounded face of the flake and the second face is made by striking flakes back from the edge. 2:6 is made from a stubby wedge-shaped piece of opaque yellow Wold flint. One face is made by two transverse blows across the piece, the reverse face is made by longitudinal flaking from the edge, the profile of the edge is that of a chisel. This method of fashioning an axe by making a wedged-shaped piece, using the unworked side as one face of the axe and flaking along the other side to make the second face and the cutting edge, seems to have been used on the Sandbeds, for there are four axes of this type. Such axes have the same chisel-like profile to the cutting edge as the tranchet axe. A similar axe from Blubberhouses Moor, to the north, found in 1960, was described as a 'tranchet roughout.[1] The total of axes from the Sandbeds site is ten.

Awls vary in type and number 13. Some are just small flakes worked to a point at the tip, as 2:7. An irregular section of a blade, 2:8, has a fine point worked on a corner and the edges blunted for gripping. 2:9 is a flake with the tip curving to one side, the tip is finely worked but the edges are untouched except for a notch midway on the incurving edge which may have acted as a stop; the butt has a well worked grip. An unusual awl is seen in 2:10. A flake with the axis curving to one side has been worked transversely across the tip to give a point almost at right-angles to the axis; the edges show a worked grip. 2:11 is a similar point but not so well worked. The point, at an angle to the axis, is a feature of the 'zinken' of Hamburgian type. 2:13 is a flake of honey-coloured Drift flint with a faint milky patina; one edge is cortex and the other is knapped vertically; the tip of the flake is sharp and the tool can only have been used as an awl.

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[1] J. Davies and W. F. Rankine, 'Mesolithic Axes from the West Riding of Yorkshire.' *Yorks. Arch. Jnl.* Vol. XL, pt. 158 (1960).

Knives are not well defined, several flakes have a feather edge showing wear and the other edge blunted for gripping, several flakes, otherwise unworked, have edges worn smooth by use. 2:12 is a large thin flake struck from the face of a flat pebble of Wold flint. This side blow flake is roughly oval with a length of 8 cm., the breadth is 6 cm., the thickness at the centre, 0.6 cm. and 0.8 cm. at the striking platform; the platform is faceted. One face has yellow-brown cortex and the inner face is blue mottled with grey. The thicker edge of the tool is blunted with vertical knapping and has notches to fit the fingers; the thinner edge is roughly flaked on both faces to give a serrated edge. This appears to be a skinning knife made for use in the right hand.

Serrated Blade

A short blade of white Wold flint has tiny flakes taken off at intervals from both faces to leave a serrated edge. 2:14.

Tools in general

Two factors seem to have had influence on the fashioning of the flint tools of Mid-Wharfedale, the scarcity of flint and the intractability of the majority of the flint used.

One proof of the scarcity of flint is the use of stone from the Local Drift. Mainly chert but almost any close-grained stone was pressed into service, often without success. Flint scrapers were split to make gravers or a working edge destroyed to make a spur. The impression is given that many tools were of good size but underwent a series of conversions as need arose and lost size with each change. That large tools were made is shown by two scrapers weighing 4½ oz. and 3½ oz. respectively, a graver is 2½ oz. in weight. Any sizeable piece of flint was put to use; distorted flakes were provided with scraper edges, often difficult to use; an accidental point had a grip added and became an awl. This use of all pieces of any size possibly accounts for the dearth of core rejuvenation flakes and tranchet axe trimmings.

Some end and horseshoe scrapers have a series of spurs in place of a continuous working edge. The number of tiny thumb scrapers is noticeable and gives wonder as to their possible use.

Many gravers are not made in orthodox fashion, instead of striking a blow on the shoulder of a blade to make a single blow graver, the blow is made on the face of the blade and the graver spall takes the form of a side-blow flake. True gravers are often made by removing the unwanted portion by a facial blow. Many single-blow gravers are re-sharpened by the removal of tiny flakes from different directions which give the requisite point but almost obliterate the original work.

NOTES

The finds from the Sandbeds flintsite were collected by four generations of one family, J. S. Cowling, E. T. Cowling, J. C. Cowling, P. C. Cowling. A total of three hundred and twenty man hours has been spent on the site.

It is to be regretted that since the start of this record the Sandbeds flintsite has been largely destroyed by the making of playing fields for Prince Henry's Grammar School.

B. Whittaker, Ph.D., M.A., of Nottingham University, must be thanked for his identification of the various minerals of the site. Mr. Paul Wood has given generous aid with the maps. Messrs. C. Woodwarde, R. Hardisty, F. Jennings, who are all seekers of flints and flint sites, are to be thanked

for up-to-date information on flint finds. Mr. Woodwarde has given knowledge gained by twenty years acquaintance of local flintsites.

SUMMARY

Because of the nature of the site, (Fig. 3) on slopes above the river terrace and on ground which had been well ploughed in medieval times, dating by stratification, carbon 14 or pollen analysis is impossible. The position of the site, the typology of the tools and the raw materials used do give some guidance. The length of time covering the various occupations must be taken into account.

The position on a river terrace, alongside a lake of some size, is similar to that of many sites which stretch in a belt across the European plain from the Baltic to Great Britain. These sites are of Mesolithic date and are generally accepted as Maglemosian.[2] In type, the artifacts from the Sandbeds may safely be classed as Mesolithic, with typical cores, gravers, axes, scrapers, awls, micro burins and microliths. The micro burins confirm the Mesolithic content. The axes, ten in number, including two tranchet axes, are significant. Armstrong makes no claim to include axes in his Cresswellian material[3] but Clark has shown that they are common to most Maglemosian sites across Europe. The small acutely-pointed microliths, blunted down one edge, are common to Mid-Wharfedale sites and numbers from the Lower Pennine Moors are to be seen in the Taylor and Crowther collections, now in the Lister Park Museum, Bradford. No comparable microliths are to be seen in the assemblages from south Yorkshire[4] or the moors of North-east Yorkshire.[5] It is tempting to suggest a Cresswellian origin for these tiny microliths but no similar specimens of that origin are known to the writer.

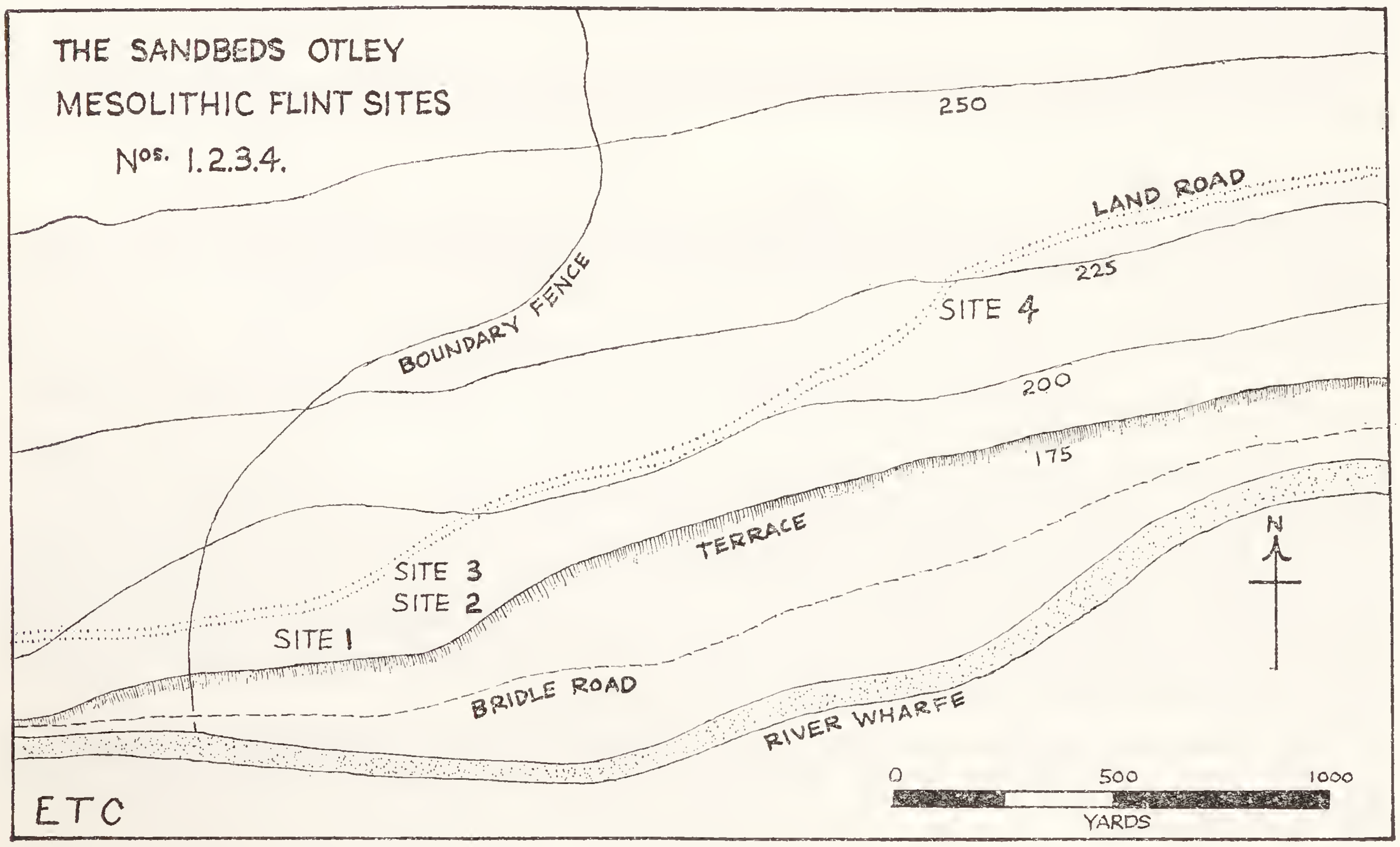

Fig. 3.

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[2] Clark, J. G. D., *The Mesolithic Settlement of Northern Europe* (1936).

[3] Armstrong, A. L., 'Excavations at Mother Grundy's Parlour, Cresswell Crags, Derbyshire, 1924'. *Journal of the Royal Anthropological Institute*. Vol. LV (1925).

[4] Radley, J. and Marshall, G., 'Mesolithic Sites in South West Yorkshire'. *Yorks. Arch. Jnl.* Vol. XLI, pt. 161 (1963).

[5] Radley, J., 'The Mesolithic Period in North East Yorkshire.' *Yorks. Arch. Jnl.* Vol. XLII, pt. 167 (1969).

The raw materials of the Sandbeds, Wold flint, Drift flint and Local Drift, are of interest. Local Drift is of little importance: it was a handy material used in times of scarcity of flint by all local cultures down to the Bronze Age, and in itself, it offers no evidence. The presence of the two differing flints, Wold and Drift, almost explains itself. Drift flint is by far the most workable and would be preferred if available. It has already been noted that occasional heavily-patinated artifacts of Drift flint have been found, apparently early chance finds, worked by the users of Wold flint. The better working qualities of this material must always have been appreciated and when it ultimately became available the use of Wold flint would be discontinued.

There are some indications that the period covering the use of Wold flint was of greater duration than that of the use of Drift flint. Wold flint is 78% of the content of the site and Drift flint is 11%; the Wold flints are seven times as numerous as those of Drift. This suggests a greater number of occupations by the Mesolithic people using Wold flint. The early artifacts of Drift flint are heavily patinated and bear little resemblance to the bulk of Drift flints which show little patination. Patination is always considered an uncertain guide but the heavy patination of these Drift flint artifacts, apparently made from chance finds when Wold flint was being used, must have taken some time.

It must be emphasized that in general there is no difference in the tools produced when production went over to Drift flint. The one exception is in the form of the microliths. There are 35 acutely pointed microliths of Wold flint and nine obliquely blunted points, five of Wold flint and four of Drift flint. It seems that the fashion of making obliquely-blunted points came to the Sandbeds about the same time as the changeover of raw materials. Obliquely-blunted points are common to some Mesolithic sites, notably Star Carr. The Sandbeds appears to have had many occupations by peoples using Wold flint and making acutely pointed microliths, but who turned to Drift flint and the making of obliquely-blunted points.

If this interpretation of the history of the Sandbeds, based on the raw materials, is correct, it should apply to neighbouring sites. Fortunately there is no lack of local sites to which it can be applied.

FLINTSITES ABOUT MID-WHARFEDALE (Fig. 4)

The sites are grouped according to the raw material used at the time of occupation.

Group 1. Yorkshire Wold flint and some Local Drift.

1. The Deer Park, Caley, SE/227 442, Alt. 750 ft. A moorland site on the brow of the eastern part of the hill ridge. Artifacts 263, cores 3, microliths 3, gravers 6, scrapers 7.
2. Green Bank, Burley Moor, 136 454, 1025 ft. A flaking site on a low mound south of the Idol Stone. Artifacts 81, cores 4, Micro burins 2, gravers 5, scrapers 4, not included in the Green Crag Slack count.
3. Shepherds Hill, Addingham High Moor, 083 466, 1200 ft. Artifacts 201, cores 3, scrapers 4, microliths 4, gravers 6.
4. Snowden Moor, 176 514, 800 ft. On the level above Snowden Crags. Artifacts 40, core 1, scraper 1, graver 1.
5. Askwith Moor, 172 511, 975 ft. East of the summit, Artifacts 175, microliths 5, cores 2, gravers 2.
6. Crow Well, Denton Moor, 141 520, 1000 ft. East of the shooters' hut. Artifacts 40, cores 3, graver 1, scrapers 3.
7. Thatch Ling Moss, Middleton Moor, 130 530, 1150 ft. Artifacts 21, core 1, micro burin 1, scraper 1.
8. Langbar Moor, Langbar, 104 506, 750 ft. On the edge of the moor. Artifacts 21, gravers 2, scrapers 2.

9. High Crag, Addingham Moorside, 076 472, 1200 ft. A high point on the escarpment. Artifacts 156, cores 3, gravers 3, scrapers 3.
10. Broken Brow, Newall, 187 458, 185 ft. This area, alongside the river plain, was formerly covered by low hillocks, varying from 190 to 200 ft. which must have been islands in the former lake. Now destroyed by gravel working. Since 1967 the following flints have been found in the topsoil of these mounds. Artifacts 41, gravers 4, scraper 1, a well worked spur.
11. Green Crag Slack, Quarry site, 139 458, 950 ft. From above the quarry at the east end of the slack. Artifacts 29, gravers 4, scraper 1, not included in the Green Crag Slack count.

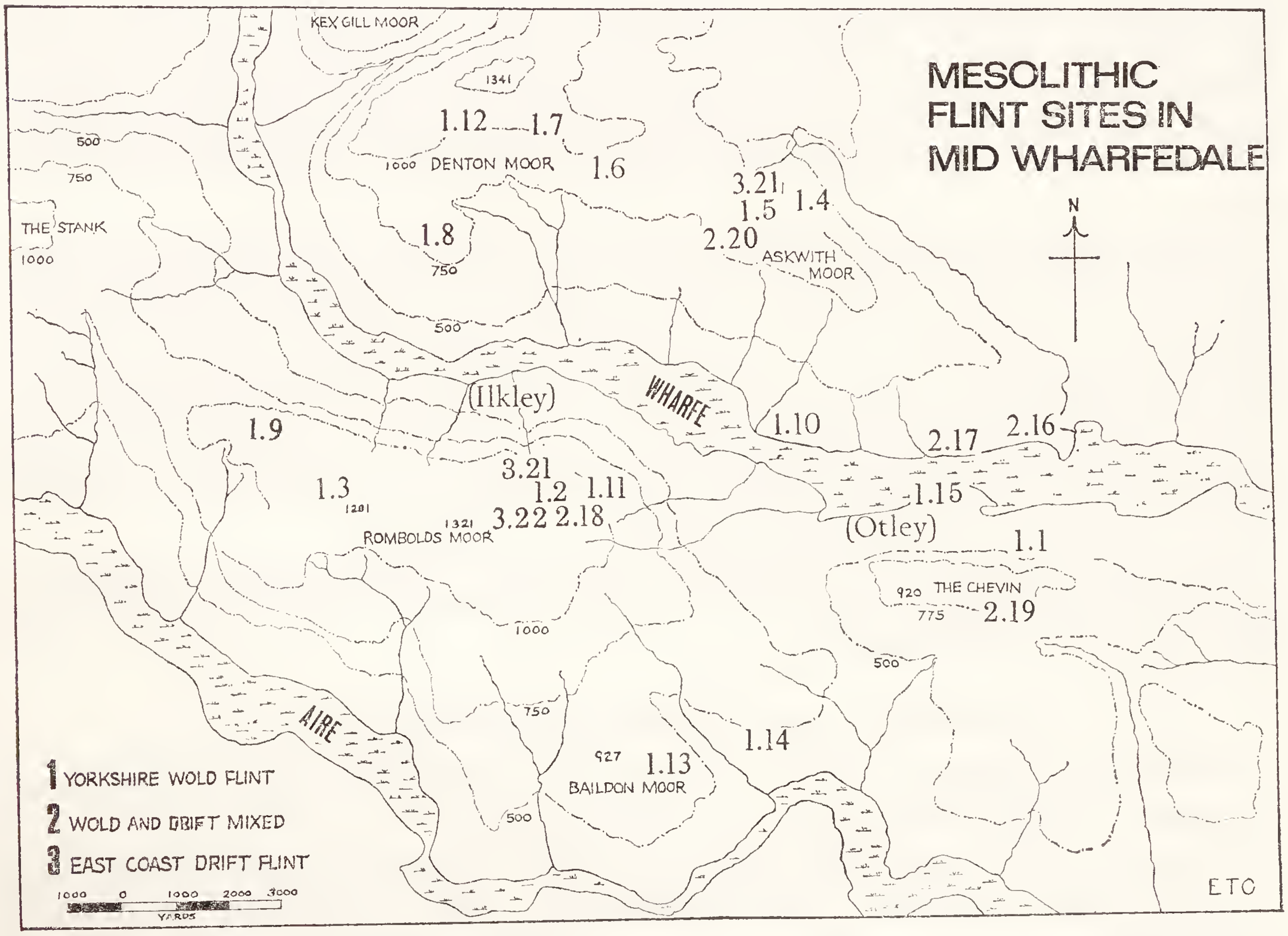

Fig. 4. The find-spots refer to flints mentioned in pp. 4-12 of the text and illustrated in Figs. 1 and 2.

12. Catholic Gate, Middleton Moor, 116 528, 1025 ft. From the east of the footpath. Artifacts 29, core 1, microliths 2, scrapers 2.
13. Baildon Moor, Baildon, 143 403, 800 ft. From the east of the summit. Artifacts 34, gravers 2, scrapers 2, edge worked flakes 3.
14. Birkin Hill, Hawkesworth, 163 415, 600 ft. By the footpath. Artifacts 105, including cores, gravers and scrapers.
15. The Township of Otley. Scattered finds of Wold flint, mainly from the river terrace level of 180 ft. suggest a buried Mesolithic settlement.

Group 2. Those sites which have both Wold and Drift flint as raw material, marking the change of the use of one flint to the other.

16. Washburn Foot, Leathley Bridge, 229 462, 175 ft. A terrace site at the confluence of the rivers Wharfe and Washburn. Here the terraces of the two rivers joined to thrust a spur into the former lake. This prominent point gave easy access to the

common watershed and the neighbouring hill ridges. The land was under the plough in medieval times and the gravel working revealed that the flints were mixed indiscriminately in the top soil which overlaid a bed of gravel. The Mesolithic artifacts were of Wold and Drift flint and identical with those of the nearby Sandbeds site on the same river terrace. There were also two rhomboidal arrowpoints of Tardenoisian type. Also present was a considerable element of Neolithic and Bronze Age material including five leaf-shaped arrowpoints and one barbed and tanged point, also a chipping of a polished dolerite axe. The raw material presented a difficulty, the Wold flint assorted itself as Mesolithic but all the remaining cultures made use of Drift flint. Except for tools of definite types, such as gravers, it was impossible to know to which culture a tool might belong. This must be expected when differing peoples have used the same site. By taking the tools and artifacts of Wold flint and the recognizable ones of Drift flint the Mesolithic content of Washburn Foot is: Artifacts 1915, cores 58, micro burins 2, graver spalls 8, microliths, acutely pointed 35, gravers 34, scrapers 33, awls 8, tranchet axe 1, serrated flake 1, cut or edge worked flakes or blades 78, knives 4.

The Washburn Foot site was first published in 1936[6] and reviewed in 1946[7]; the present appraisal includes new material. The whole area has been excavated in the search for gravel.

17. The Sandbeds, Otley, 209 462, 175 ft. A terrace site on the north side of the river Wharfe and to the east of Otley (see above pp. 1–7). Artifacts 5,417, cores 174, cut and edge trimmed flakes 70, blades 82, micro burins 21, graver spalls 10, core rejuvenation flakes 8, microliths 46, scrapers 74, gravers 275, tranchet axes 2, axes 8, awls 13, knives 8, serrated flake 1.
18. Green Crag Slack, Burley Moor, 135 459, 1025 ft. A flat moorland area bounded to the north and south by escarpments and to the east and west by Coldstone and Bakestone Becks. This area seems to have had all that prehistoric man wanted for occupation, wide views, clear of heavy timber, level camping, plenty of water, open to the sun and easy of access. There are records of flints being found here over the last hundred years and the numbers found must exceed those from any other area in the district. Many of these artifacts have disappeared but others are to be found. In various hands are, gravers 39, scrapers 54, tranchet axe 1, cores 13. 12 geometric triangles (below) were found in a group at the west end of the Slack. Besides the artifacts from the flaking sites, listed separately, the writer has collected Artifacts 342, cores 15, micro burins 2, acutely-pointed microliths 20, gravers 8, scrapers 15, cut or edge-worked flakes 13, blades 11. These finds prove that Green Crag Slack must have been the scene of many visits by Mesolithic man.
19. Owlet Plantation, Yorkgate, Otley, 217 436, 820 ft. This site, on the ridge of the Chevin, was put under the plough in 1970 and Wold and Drift flints have come to light. Artifacts 150, cores 2, gravers 4, scrapers 3.
20. Ellercar Pike, Denton Moor, 159 522, 950 ft. A moorland summit. Artifacts 50, core 1, gravers 6, scrapers 6.

Group 3. Those sites which have only Drift flint as raw material.

As it has been stated that after the change-over from the use of Wold flint to Drift flint, all succeeding cultures kept to the use of Drift flint, it is necessary to examine all sources which show evidence of that continuation. As the larger sites of Washburn Foot, The Sandbeds and Green Crag Slack show the traces of many occupations the possibility of an occupation using only Drift flint must be considered. Local Mesolithic sites which only make use of Drift flint are:–

21. Askwith Moor, Site 2, 173 511, 970 ft. To the east of the summit. Artifacts 101,

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[6] Cowling, E. T., 'Flint Implement Sites in Mid-Wharfedale.' *Yorks. Arch. Jnl.* Vol. XXXIII, pt. 129 (1936).

[7] Cowling, E. T., *Rombalds Way*, Otley, 1946.

gravers 2, microliths 34, including 13 geometric triangles, 8 rods, 2 crescents. There was much fine flint dust, too minute for the sieve. Probably of the Sauveterrian culture.

22. Green Crag Slack. A small area towards the west end of the slack has produced 12 geometric triangles but no sign of a flaking site. Possibly of Sauveterrian origin.

Scattered finds of obliquely-blunted blades come from Hope Hill, West Lanshaw, Green Crag Slack, Denton Moor, Buckstones, Rivock Top and Butts Hill; all are of Drift flint. Gravers made from Drift flint have been found at Hawkesworth Moor, Hanging Stones, Bakestone Beck, Grubstones, Askwith Moor, Blubberhouses Moor, Rivock Top and Holbeck. These widespread finds of obliquely blunted points in Drift flint show the penetration of Mid-Wharfedale by their Mesolithic makers. The gravers in the same flint could well have been made by the same or later people.

The Neolithic and Bronze Age peoples made use of Drift flint in Mid-Wharfedale, their sites can be dated by the type tools, Arrowpoints are pear or leaf shaped or barbed and tanged, there are plano-convexo knives, scrapers and pressure worked tools. With the exception of Otley, Washburn Foot and Tatefield Hall, all are moorland sites about the 1000 ft. contour line and usually revealed by erosion.

Sites

No. 1 Washburn Foot, Nos. 2, 3, 4 Askwith Moor, No. 5 Snowdon Moor, No. 6 Ellerker Pike, No. 7 Lippersey Pike, Nos. 8, 9, 10, 11, 12 Crowwell, No. 13 Woolstones, No. 14 Catholic Gate, No. 15 Shepherds Hill, No. 16 Grubstones, Nos. 17, 18, 19 Green Crag Slack, No. 20 Woofa Bank, No. 21 Butts Hill, No. 22 Danfield, Otley, No. 23 Bog Ridge, No. 24 Otley, No. 25 Hope Hill, Baildon, No. 26 High and Low Bradley, No. 27 Bucking Hill, No. 28 Tatefield Hall, No. 29 Briscoe Rigg.

(These sites were described and mapped in 1946.)

THE AFFINITIES OF THE SANDBEDS MESOLITHIC SITE

By Paul Mellars

In the preceding article Mr. E. T. Cowling has described a collection of Mesolithic artifacts recovered from a site overlooking the River Wharfe at Otley in the West Riding of Yorkshire. The importance of this material derives principally from two features. On the one hand the size of the collection makes it one of the largest so far obtained from a Mesolithic site in the north of England. On the other hand the location of the site is of considerable interest from an environmental and economic point of view. In the latter connection it may be recalled that while Mesolithic industries have been found abundantly at sites on the higher moorland areas of northern Britain, well documented discoveries from more low-lying locations are much more sparsely represented.

The site therefore provides an interesting opportunity to compare a collection of Mesolithic artifacts from a riverside settlement with those recovered from a number of sharply contrasting environmental locations. Particularly instructive comparisons can be made between the Sandbeds artifacts and those from the site of Deepcar on the eastern margin of the Pennine uplands, and the lake-side settlement of Star Carr in the Vale of Pickering. I am indebted to Mr. Cowling both for agreeing so readily to these comparisons, and for providing every facility for me to re-examine the Sandbeds material.

RAW MATERIALS AND TYPOLOGY

In order to simplify the typological discussion the major features of the Sandbeds material have been summarized in Table 1. The artifacts have been subdivided according to raw material under four main headings: *Wold flint*. This is the material which has been described in earlier papers[1] as 'grey-white flint with cherty inclusions'. As Mr. Cowling has indicated, this material almost certainly derives from sources in the Yorkshire or Lincolnshire Wolds. Patches of cortex remaining on some pieces suggest that at least some of the flint may have been obtained direct from the chalk.

Coloured flint. This corresponds with the material described by Mr. Cowling as 'Drift Flint'. Several varieties of translucent and semi-translucent flint, ranging in colour from grey to reddish brown, are represented.

Chert. This material, referred to by Mr. Cowling as 'Local Drift', is very varied. A few of the pieces resemble the good quality black chert which occurs abundantly at Mesolithic sites in the Peak District, but most of the material is of poorer quality, ranging in colour from pale grey to dark grey-brown. The ultimate sources of this material are probably limestone outcrops in the central Pennines. However, the immediate source of both this and the coloured flint may well be secondary gravel deposits, possibly of glacial origin.

Patinated flint. In this case the nature of the original material has been obscured by heavy patination. Much of the material probably originated as translucent flint.

In assigning the various tool-forms and waste products to the categories listed in Tables 1 and 2 fairly strict definitions have been adhered to and doubtful specimens have not been included. The following comments on the major types should be read in

[1] J. Radley and P. Mellars, 'A Mesolithic structure at Deepcar, Yorkshire, England, and the affinities of its associated flint industries,' *Procs. Prehist. Soc.*, XXX (1964), pp. 1–24.

conjunction with the much fuller typological descriptions provided in Mr. Cowling's report.

Microliths. All of the microliths from the site, both complete and fragmentary, are illustrated in Fig. 1. It will be seen that by far the most numerous microlithic type in the collection is the simple 'non-geometric' obliquely-blunted-point (Nos. 1–21). Points blunted down the whole of one edge are also well represented (Nos. 22–27, 34–38, 41), and several of these are of relatively narrow, 'rod-like' proportions (e.g., Nos. 34–37). Two good examples of isosceles triangles, one short, the other elongated, are present (Nos. 28, 29). Smaller 'geometric' forms are represented by three scalene triangles (Nos. 30–32) and by a small but very well characterised example of a rhomboid (No. 33). These small geometric pieces appear to be manufactured from typical Wold Flint and there seems no reason to doubt their association with the larger non-geometric forms.

Scrapers. Only pieces made on flakes and showing well retouched, clearly convex edges have been included in this category. Numerically, this appears to be the most important tool form in the Sandbeds collection.

Four of the scrapers differ both in form and technique from the other pieces and almost certainly represent intrusive Neolithic or Bronze Age specimens. Three of these implements are manufactured from grey-brown translucent flint whilst the fourth appears to be worked on a flake from a Great Langdale axe. These pieces have not been included in the totals quoted in Tables 1 and 2.

In addition to the characteristic flake scrapers mentioned above several of the cores from the site may well have been trimmed and utilised as core-scrapers.

Burins. Although the objective identification of burins sometimes proved rather difficult, definite examples of flake and blade burins are undoubtedly well represented in the Sandbeds material. The rather strict definition of the type adopted here explains the difference between the number of burins quoted in Table 1 and the total of 'gravers' recorded in Mr. Cowling's analysis. The discrepancy between the numbers of burins and burin-spalls recovered from the site may reflect nothing more than the inevitable under-representation of small objects in surface collections obtained from ploughed land.

As Mr. Cowling has emphasized, many of the cores from the site may well have been deliberately modified for use as core-burins. However, the identification of these pieces seemed too subjective in practice to justify their inclusion in the totals quoted here. Inclusion of these forms might increase the overall total of burins by as many as 20–30 pieces.

Saws. A single well characterised specimen of this type is illustrated in Fig. 2 No. 14 of Mr. Cowling's report.

Axes. The writer has agreed to differ with Mr. Cowling over the identification of axes in the Sandbeds material! Whilst certain pieces may well have *functioned* as axes (e.g., No. 3, Fig. 2 of Mr. Cowling's report) it seems open to question whether any pieces were deliberately *manufactured* as such. Careful searching of all the waste material from the site has failed to reveal any convincing examples of axe-sharpening flakes.

Miscellaneous retouched and utilised pieces. In addition to the well-defined tool-forms listed above a large number of flakes bearing notches and other kinds of edge chipping are present in the collection. Owing to the difficulty of distinguishing genuine retouch from damage caused by ploughing, no attempt has been made to give a precise total for these pieces. A conservative estimate would be that at least 10 per cent of the flakes found on the site exhibit some signs of deliberate retouch and/or utilization.

Cores. Only pieces from which at least three flakes have been removed have been classified as cores. A detailed breakdown of core typology is given in Mr. Cowling's report. The small size recorded for the cores in translucent flint (average weight 10.9 gm.) probably reflects the scarcity of this raw material and the value attached to it by the flint workers.

DISCUSSION

The Sandbeds artifacts were collected over a comparatively large area in which four distinct concentrations of material could be identified. To what extent the collection described in this report represents a homogeneous 'industry' must therefore inevitably remain in some doubt. Nevertheless, with the exception of a small number of obviously post-Mesolithic pieces (notably the four scrapers referred to above) it seems clear that the overwhelming bulk of the Sandbeds artifacts are of Mesolithic date, and several indications suggest that at least the majority of these pieces are the products of a closely related series of occupations. Proceeding on this basis, therefore, it is worth making a few brief comparisons between the Sandbeds material and the assemblages recovered from some of the other well-documented Mesolithic sites in northern England.

Current dating evidence suggests that the British Mesolithic can be divided into two major phases.[2] The earlier phase is characterised principally by microliths of simple 'non-geometric' forms and comprises industries which have generally been attributed to the Maglemosian tradition (e.g. Star Carr, Thatcham, Broxbourne). The later stage of the Mesolithic appears to be characterised by the introduction of a range of smaller 'geometric' microlithic forms, many of which recall those found in the French Sauveterrian.[3] In the upland areas of northern England these two stages appear to be represented by what Francis Buckley termed respectively the 'Broad Blade' and 'Narrow Blade' microlithic industries. Of particular interest in the present context is the fact that the distinction between the Broad Blade and Narrow Blade industries is reflected not only in the typology of the microliths but also in the raw materials employed on the sites. Thus (with one or two significant exceptions) the Broad Blade assemblages are manufactured predominantly from rather poor-quality white or grey flint of Yorkshire or Lincolnshire Wold origin, whereas the Narrow Blade industries are generally worked in better quality translucent flint.[4] Unfortunately, direct evidence for dating the Broad Blade assemblages is at present lacking, but by analogy with the situation in southern Britain they may tentatively be assumed to represent a somewhat earlier stage in the Mesolithic occupation of northern England than that represented by the Narrow Blade industries.

Within this general framework it seems clear that the overall typological affinities of the Sandbeds artifacts lie closer to the Broad Blade than to the Narrow Blade grouping. This is suggested not only by the general composition of the microlithic forms but also by the clear predominance of grey-white wold flint amongst the raw materials employed on the site. At the same time the presence of three or four typical small geometric types amongst the Sandbeds microliths represents an element which appears to be entirely absent from at least some of the Broad Blade assemblages of the Pennine area (most notably Deepcar: *P.P.S. XXX,* 1964, Fig. 5). If these geometric pieces are truly associated with the non-geometric forms they might indicate a more recent age for the Sandbeds material than for the exclusively Broad Blade industries. However, in view of the uncertainties inherent in any surface collection it is hardly possible to draw any firm conclusions along these lines.

Aside from the purely taxonomic and chronological aspects of the Sandbeds material the collection is of considerable interest from a more economic or 'functional' point of view. As already pointed out, the low-lying, riverside location of the Sandbeds site contrasts sharply with that of the majority of Mesolithic settlements in the north of England and one might expect this contrast to be reflected in the nature of the activities undertaken – and therefore in the composition of the flint assemblages – at the different sites. In fact, such differences do seem to be discernible when the overall composition of the Sandbeds artifacts is compared with that of assemblages recovered from a number of upland localities (Table 2). How much significance should be attached to the comparatively low proportion of microliths among the Sandbeds artifacts is perhaps debatable when a surface collection is being compared with material obtained from excavated sites. But variations in the relative proportions of burins and scrapers almost certainly cannot be explained in these terms. Thus the occurrence of a much higher ratio of burins : scrapers at the Sandbeds site (1 : 1.8) than that recorded in the excavated assemblage from Deepcar (1 : 4.6) almost certainly reflects a significant difference in the activities undertaken at the two sites. A still higher burin : scraper ratio (almost 1 : 1) was recorded by Clark in his excavations at Star Carr, where it has been attributed to the intensive manufacture of artifacts from red deer antler during the winter months.[5] An equally striking difference between the assemblages from the Sandbeds and the Pennine sites can be seen in the frequencies of discarded flint and chert cores. Thus the ratio of cores : total tools (microliths + scrapers + burins) in the Sandbeds material works out at 1 : 0.8 as compared to the much lower values of 1 : 6.7 and Deepcar and 1 : 4.1 at the three Huddersfield sites. In this case the situation recorded at the Sandbeds also contrasts (though not so sharply) with that encountered at Star Carr, where the core : tool ratio works out at 1 : 3.1.[6]

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[2] P. Mellars, 'The Palaeolithic and Mesolithic periods in Britain', in A. C. Renfrew (ed.) *British Prehistory: a new outline* (1973 – in press).

[3] J. G. D. Clark, 'A microlithic industry from the Cambridgeshire fenland and other industries of Sauveterrian affinities from Britain', *Procs. Prehist. Soc.,* XXI (1955), pp. 3–20.

[4] Radley and Mellars, *op. cit.,* pp. 18–19.

Thus comparisons between a number of predominantly 'Broad Blade' microlithic assemblages from northern England does seem to reveal significant differences which can probably be attributed to the varying activities undertaken on the sites. In a recent discussion of this problem J. G. D. Clark has suggested that the upland sites may represent primarily summer settlements whereas the lowland sites were probably occupied mainly during the winter months.[7] Such an interpretation would certainly accord well with both the location and the character of the Sandbeds site. A settlement on the south-facing slopes of the Wharfe valley would probably offer reasonable protection from winter weather conditions, while at the same time allowing easy access to the high-level plateaux of the central and southern Pennines during the summer months. In fact, Mesolithic groups occupying the Sandbeds site would have been able to gain access to areas well above the 1,000-foot contour by travelling a distance of no more than 5 miles (8 km.) as the crow flies. In addition, to judge by the present behaviour of red deer in the Scottish Highlands and elsewhere, the Wharfe valley may well have acted as a refuge area in which herds of these and other animals would congregate during the winter season. All in all, the environmental situation has several analogies with that at Star Carr where winter occupation could be demonstrated conclusively from the faunal remains.

On the basis of the foregoing considerations, therefore, the Sandbeds site might plausibly be interpreted in terms of a series of temporary settlements occupied by Mesolithic communities primarily during the winter season. Most probably the site was visited over a period of time by groups of nomadic hunter-gatherers who spent some part of each year on the higher moorland areas immediately to the west. On typological grounds it has been suggested that these occupations are more closely allied to the earlier than to the later stages of the Mesolithic in northern Britain. However, in the absence of any direct evidence for either economy or chronology, all of these suggestions must remain to a large extent speculative.

[5] J. G. D. Clark, *Star Carr: a case study in bioarchaeology,* Addison-Wesley Modular Publications, Reading (Massachusetts) (1972), p. 34.

[6] J. G. D. Clark, *Excavations at Star Carr* (1954).

[7] Clark, *op. cit.* (1972).

Table 1

The Sandbeds, Otley: principal tool forms and waste products classified according to raw materials. (The table incorporates material found on the site up to December 1972. Certain totals are therefore somewhat higher than those recorded in Mr. Cowling's report).

	Wold flint	Coloured flint	Chert	Patinated flint	Totals
Microliths (complete and fragmentary)	25	6	2	14	47
Scrapers (flake/blade): single	47	5	8	15	75
double	2	–	1	1	4
Burins (flake/blade)	17	5	11	12	45
Saws	1	–	–	–	1
Micro-burins: Butt, R.H.S. notch ..	8	1	–	4	13
Butt, L.H.S. notch ..	1	–	–	–	1
Miss-hit and unfinished forms ..	3	1	–	2	6
Cores	80	30	69	35	214
Average weight of cores (grammes) ..	21.0	10.9	21.2	17.7	18.8

Table 2

Comparison of selected features of the lithic assemblages from the Sandbeds, Deepcar, Star Carr and three 'Broad Blade' microlithic sites (Warcock Hill North Site, Lominot and Windy Hill) in the Huddersfield region. Data on the Star Carr assemblage are taken from J. G. D. Clark, *Excavations, at Star Carr* (1954); data on Deepcar and the three Huddersfield sites are from *P.P.S.*, XXX (1964), pp. 1–24.

	Sandbeds	Deepcar	Huddersfield Sites	Star Carr
Microliths	47	68	137	248
Scrapers (flake/blade)	79	37	87	326
Burins (flake/blade)	45	8	15	334
Cores	214	17	58	292
Micro-burins	14	96	72	15
Average length of scrapers	24 mm.	28 mm.	26 mm.	?
Average weight of cores	18.8 gm.	36 gm.	26 gm.	?
Ratio burins: scrapers	1:1.8	1:4.6	1:5.8	1:1.0
Ratio cores: total tools .. .. .. (microliths + scrapers + burins)	1:0.8	1:6.7	1:4.1	1:3.1

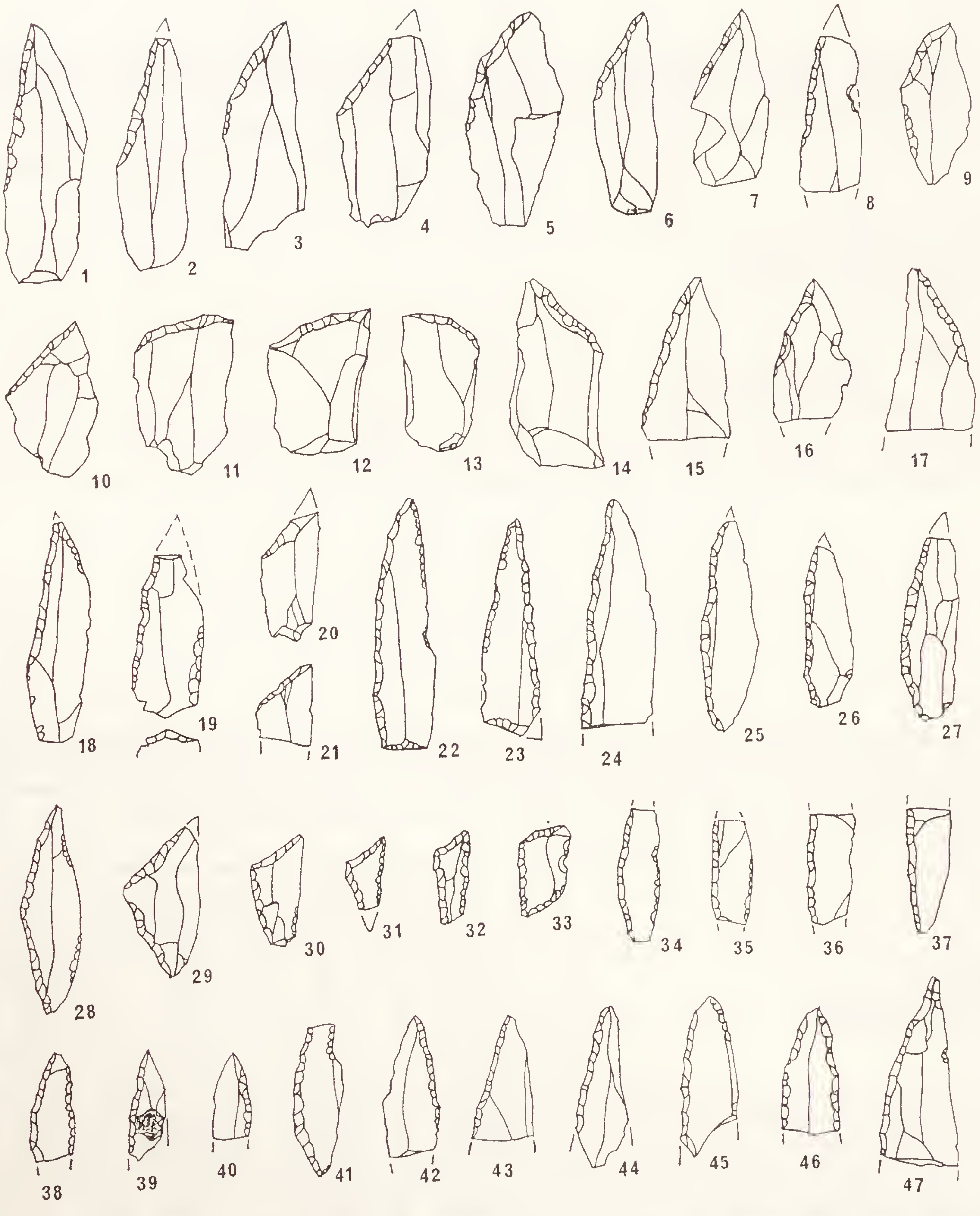

FIG. 1. Microliths from the Sandbeds site, Otley. Nos. 6, 7, 11, 13, 14 retain the bulbs of percussion. Raw materials are as follows: coloured flint – Nos. 2, 6, 10 12, 14, 29; pale grey chert – Nos. 11, 17; patinated flint – Nos. 4, 13, 18, 19, 23, 26, 27, 34, 37, 38, 40, 42, 44, 45; the remainder are of grey-white Wold flint. Scale 1:1.

THE SITE OF A MEDIEVAL POST MILL AND PREHISTORIC SITE AT BRIDLINGTON

By J. R. Earnshaw

ABSTRACT

This report deals with the rescue excavation of a mound on the western outskirts of Bridlington. It proved to be the site of a medieval windmill owned by the Augustinian Priory at Bridlington. In addition, traces were found of a Neolithic burial, extensive Mesolithic occupation and many domestic items of the 15th and 16th centuries, including numerous pottery sherds and metal objects.

During the spring of 1969, and again in March 1970, the Bridlington Corporation Parks Department bulldozed a mound on the eastern side of Bessingby Hill, known locally as The Boulevard, Bridlington. Mr. J. Grainger, the Parks Superintendent, invited the Bridlington Museums Department to examine the site for any possible finds. Unfortunately, work had already started on removing the mound and no

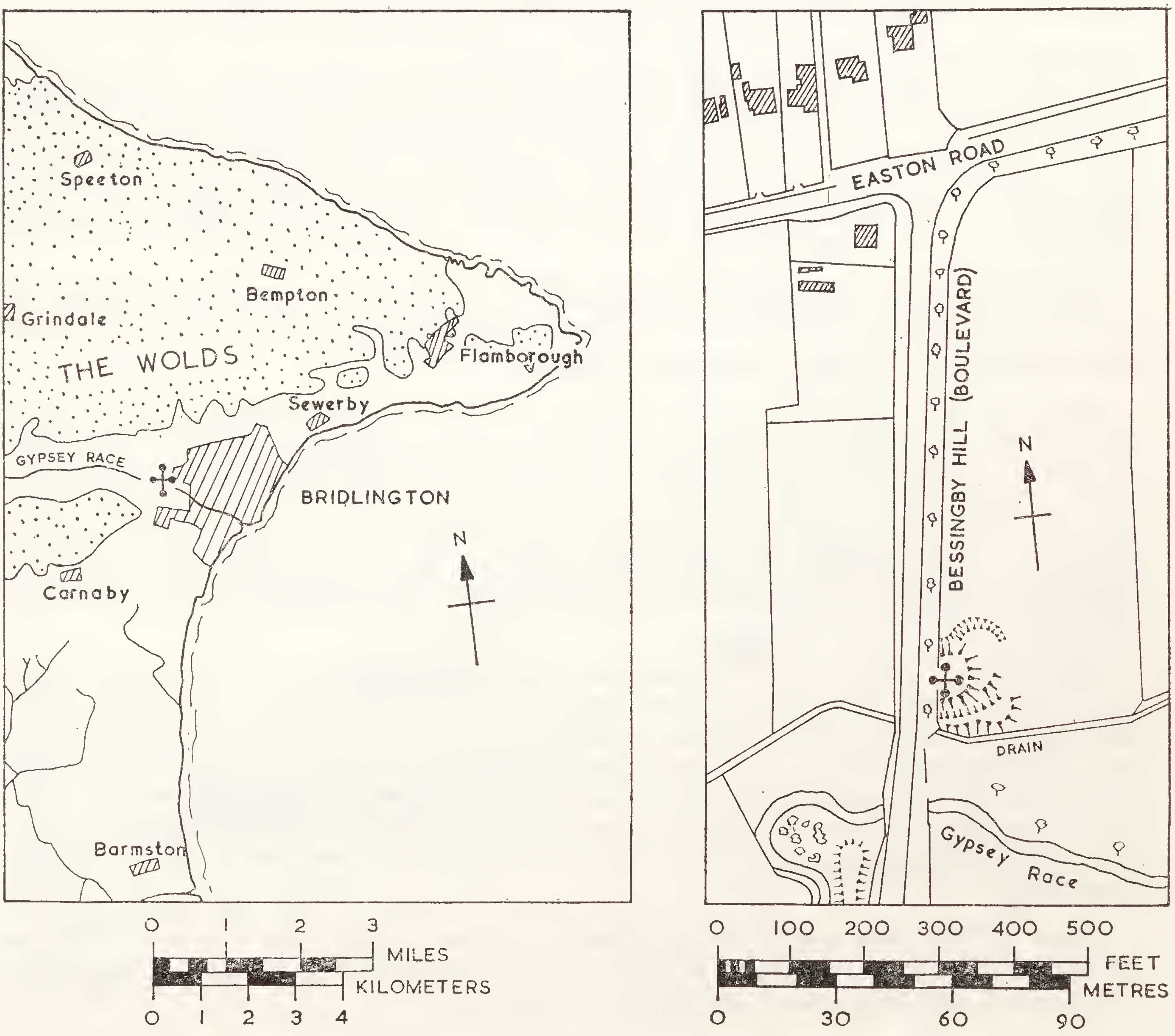

Fig. 1. Location of the Boulevard Site, Bridlington.

thorough archaeological excavation could be made, but it was possible to rescue many finds that otherwise would have been lost. The Parks Department could not delay the work as the soil taken from the site was needed to replace salt-contaminated soil at various places in the town. No sections of the mound could be made and time limited the writer to drawing plans of the most interesting structures found.

Several periods of occupation were represented under the mound, consisting of the foundations of two post mills dating from the 15th and 16th centuries, a Neolithic burial in a stone-lined pit and a large Mesolithic occupation site.

LOCATION (Fig. 1)

The site (N.G.R. TA 166676) is situated at the east end of the Great Wold Valley, on the western side of Bridlington, about 1½ miles from the sea, and between 30 and 40 ft. O.D. The mound lay in the south-west corner of a field adjoining the Boulevard on an old river terrace of fine yellow sand and chalk gravel about 150 ft. north of the Gypsey Race. It was rectangular in plan, measuring 76 ft. long by 56 ft. wide and 4 ft. 6 in. high. There was a boundary bank and ditch, and to the east of the site were the remains of medieval ridge and furrow. At the northern end of the field were further mounds, later identified as a second river terrace, and on the south side of the mound was a sunken way, forming part of an old cart track. The southern boundary of the field was marked by a watercourse called Little Beck. This may have been dug during the Middle Ages to provide power for several water mills in the vicinity.[1]

THE MOUND was constructed of a thick layer of brown soil over a core of heavy grey and yellow clay. In the north side of the mound were the remains of a substantial chalk ramp, and resting in shallow foundation trenches beneath the clay core of the mound were the oak beams of a post mill. Under one of the beams, dug into the old land surface, was the stone-lined Neolithic pit containing a burial and, roundabout, the remains of the Mesolithic site. To the west and south of this complex was located the foundation of a second post mill.

Layer 1 comprised modern turf and about 9 in. of top soil. A few sherds of 17th, 18th and 19th-century pottery, along with fragments of decorated clay pipes, window glass, iron nails and a few flint flakes were obtained from this layer.

Layer 2a was a layer of brown soil, about 2 ft. thick at the centre of the mound. Many finds of medieval pottery, and iron, bronze and lead objects were found associated with fragments of hand-made roof tiles, a glazed floor tile and animal bones. In the upper part of this brown soil the pottery comprised early 16th-century Cistercian Ware and imported French and Dutch Stonewares. Towards the centre of the brown soil were quantities of 15th-century Humber Basin Ware with smaller amounts of Scarborough and York Wares of the 14th century and a quantity of Staxton Ware, dating from about A.D. 1300.

Chalk ramp. About 26 ft. from the northern perimeter of the mound there was a chalk ramp 16 ft. by 9 ft. wide and 2 ft. thick. The ramp was constructed of large quarried chalk blocks, the base of which lay on an iron pan layer and fine yellow sand. The southern edge of the ramp rested against the brown soil of the mound, whilst the top of the ramp and its northern edge dipped slightly towards the mound's outer perimeter. Between some of the blocks were fragments of green-glazed medieval pottery and a complete medieval horse-shoe. Some of the blocks were bonded with a reddish-brown clay.

Layer 2b. This was a small heap of heavy grey and yellow clay 1 ft. 6 in. high and devoid of finds. Some of the clay had been burnt to a deep red colour, and in some cases it had fused into large pieces of clinker.

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[1] E. Mellor, *Mills & Milling: Bridlington,* Bridlington Public Libary (1965).

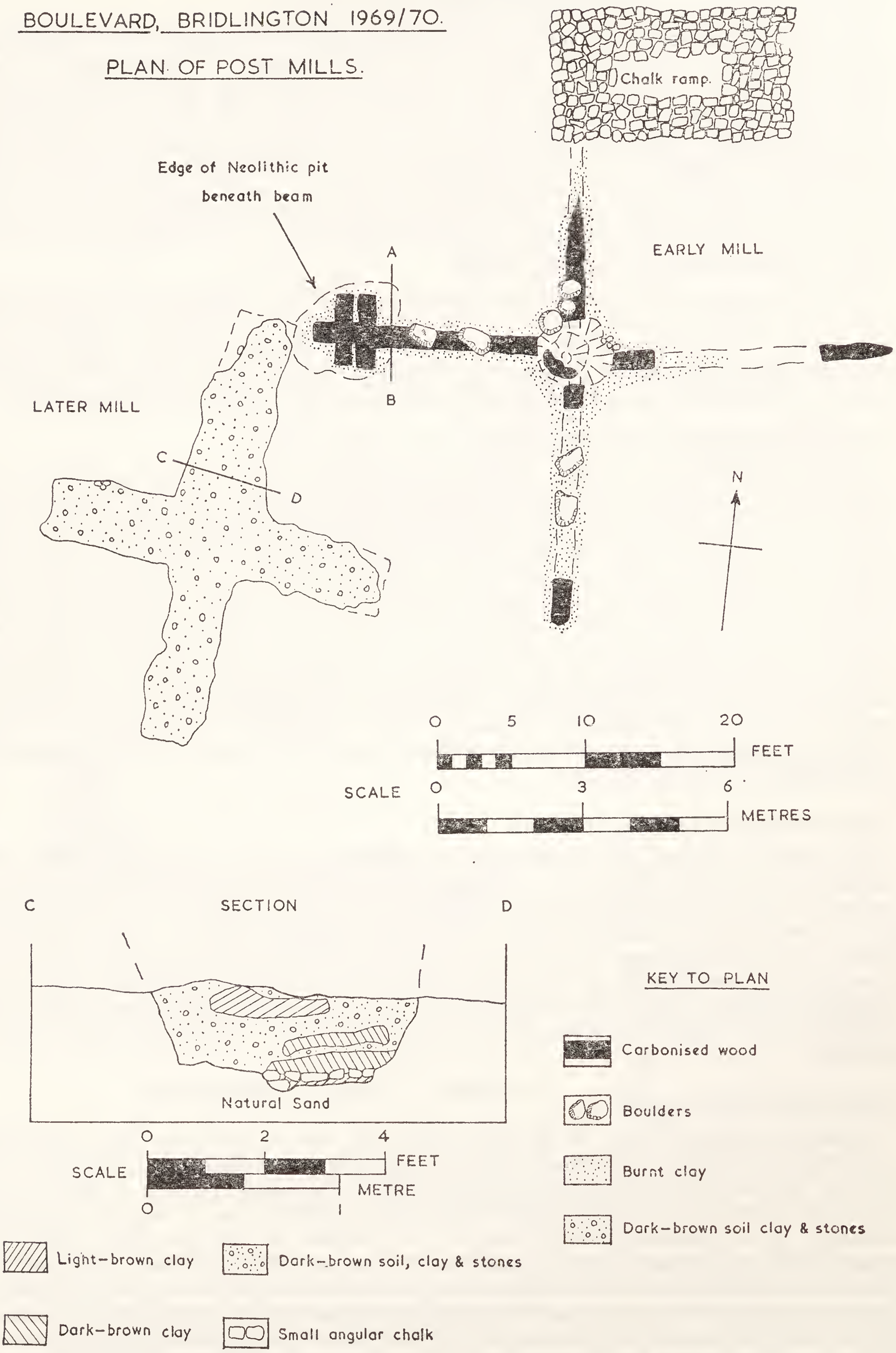

FIG. 2. Plans and Section: the Post-Mill foundations.

FOUNDATIONS OF THE EARLY POST MILL (Fig. 2)

Remains of four large oak beams and a centre post were found directly under the clay core of the mound. The beams were placed roughly at right-angles to one another and each was laid in a shallow foundation trench dug into the natural sand, and packed with clay and cobbles; three were also weighted with boulders of sandstone and volcanic rock. The best-preserved beam to be located lay roughly westwards and measured 17 ft. long by 1 ft. 6 in. in diameter. It was a carbonised trunk with two cross timbers fixed under the west end, probably to stabilise against subsidence. The other three beams were detected as lines of charcoal and pieces of carbonised wood, varying from 3 to 6 in. thick and 1 ft. 6 in. to 2 ft. wide. The north and south beams were on a lower level than the east and west beams.

The centre post, also of carbonised oak, was originally a tree trunk 3 ft. in diameter and set in a large post-hole dug 3 ft. 4 in. into the natural sand. The large post-hole was packed, like the foundation trenches, with heavy clay and cobbles. All the beams had been burnt, leading to the burning and partial fusing of the clay mound directly above the wood, the clay packing of the foundation trenches and the centre post-hole.

FOUNDATIONS OF THE SECOND POST MILL (Fig. 2)

During bulldozing in March 1970, the foundations of a second post mill were uncovered immediately south-west of the first. This was later than the mill found in 1969, for the foundation trenches had cut through the brown soil and clay of the mound. The trenches, which measured 28 ft. north to south and 23 ft. east to west, were filled with dark-brown soil, stones and clay. In the sections, no traces of wood were located, but the former position of the beams could be traced. At the base of the trenches was a layer of chalk rubble set in brown clay and above this were two layers of brown clay separated by a thin layer of dark-brown soil. From this it seems that the beams were placed between the clay packing, and after the mill became derelict they were taken up and re-used elsewhere. Unfortunately, the only finds from the trenches were two sherds of 15th-century pottery and a fragment of an iron nail. These finds are contemporary with the earlier mill and were probably deposited in the trenches of the later mill during building.

THE SUNKEN WAY AND BANK

The sunken way (p. 20, above), and a bank between this and Little Beck were bulldozed at the same time as the mill mound. It was found that the bank was made up entirely of brown soil resting against the lip of the old river terrace. The finds located in the brown soil consisted of many flint flakes, a flint scraper, several sherds of Staxton Ware pottery and a large quantity of 19th-century willow-pattern porcelain. It would thus seem that most of the bank was placed here during the 19th century. The medieval boundary ditch was utilized as a cart track at this time, for it had been deepened and a layer of 19th-century bricks, mortar and cobbles had been laid as pitching.

NEOLITHIC PIT (Fig. 3)

Under the western beam of the early post mill was an oval pit lined with small boulders and cobbles of sandstone, quartzite and volcanic rock. The pit measured 8 ft. by 6 ft. and was dug below the old land surface. The upper portion of the pit was filled with charcoal, burnt clay and brown soil, indicating that it had been partially disturbed by a foundation trench dug by the builders of the post mill. This may explain the small cross-timbers at the end of the west beam. Below this medieval disturbance were observed several small oak beams: one lay in an east-west direction, and two crossed this in a north-south direction, suggesting that the pit had been roofed. Unfortunately these timbers were removed by workmen before drawings could be made. The west end of the pit had been cut by a foundation trench of the second mill, but the remaining edges of the pit stepped down to a depth of 2 ft. 6 in. below the old land

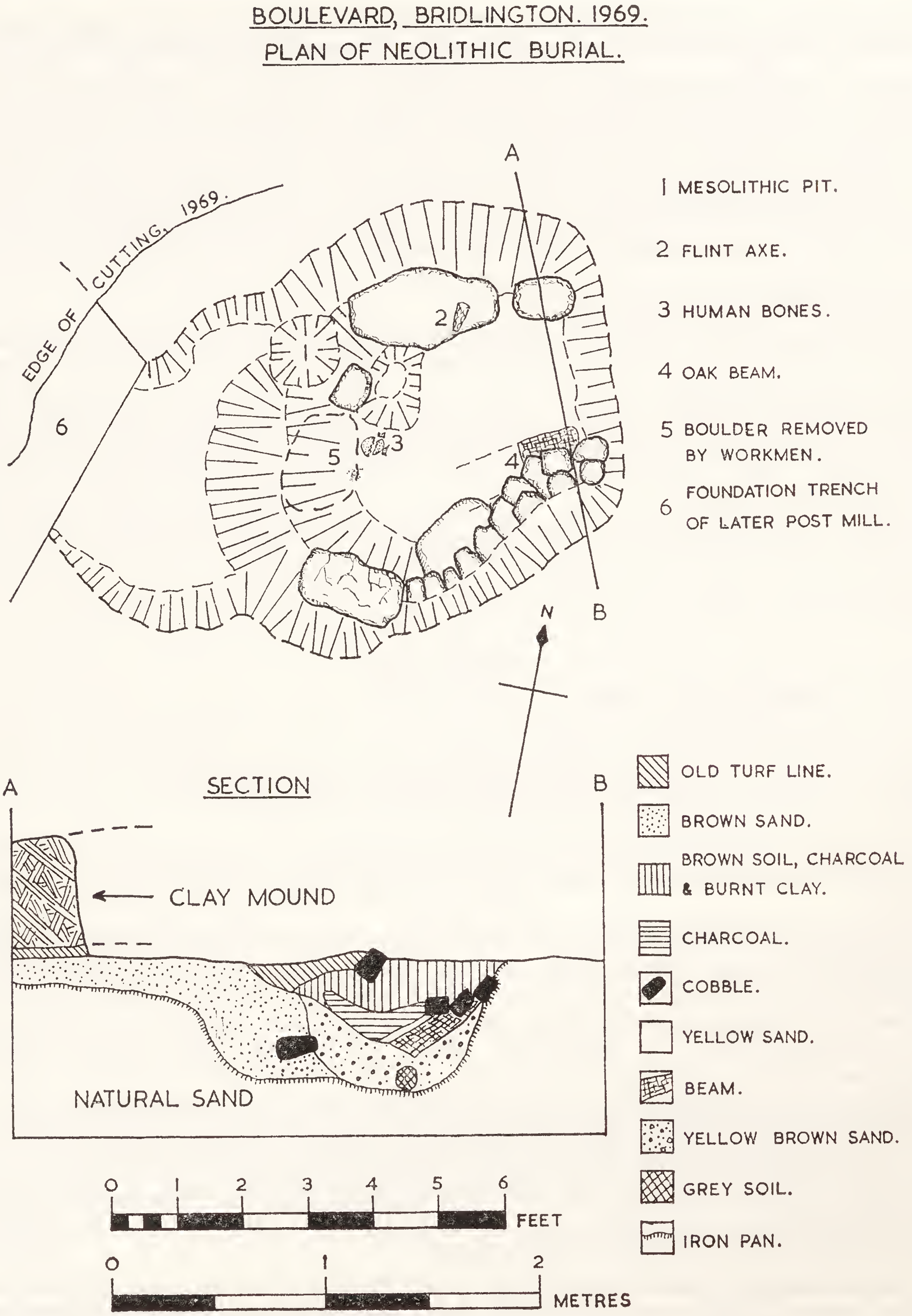

FIG. 3. Plan of the Neolithic Burial.

surface. The east side of the pit had no stone lining, but the edge was defined as a thin crust of iron pan resting on the natural yellow sand. The pit was filled with charcoal, yellow-brown sand and the remains of further oak beams which had fallen into the pit. Near the west end of the pit were found large pieces of a human skull and an atlas vertebra, all of which had been partially cremated. There was no evidence of any further human bones. Resting on a large boulder in the north side of the pit was a complete flint axe, partially polished along its cutting edge. No mound appeared to have been made over this burial pit as an old turf line covered the undisturbed areas of the pit.

Layer 3 was the pre-mound soil, averaging 6 in. thick, of undulating grey-brown sandy soil, occasionally resting on iron pan. In the old turf line, around the foundations of the early mill, were found a few sherds of medieval pottery dating from the 12th to the 15th century, part of a bronze needle, pieces of calcined bone and a large quantity of Mesolithic flints. Between the centre post of the early mill and the Neolithic pit were found three Neolithic scrapers and seven sherds of Grimston Ware pottery. Two similar sherds were located under the clay packing of the centre post of the post mill.

MESOLITHIC OCCUPATION

Under the old land surface and the foundations of the early mill were the remains of a large Mesolithic flint site. A layer of brown sand, averaging 1 ft. thick, contained flecks of charcoal, small cobbles of quartz, quartzite, basalt and iron stone. This sand yielded a large quantity of flint waste, cores, scrapers, gravers, microliths and a fragment of a flint axe. The brown sandy layer was found to continue down into several depressions or pits, the largest being about 4 ft. in diameter and 1 ft. 6 in. deep. A mesolithic pit was located on the north side of the Neolithic burial (Fig. 3) and this measured 1 ft. in diameter by 9 in. deep. A few flint flakes and a burnt flint scraper were found within the filling. Under the Mesolithic occupation was observed an iron pan with the natural yellow sand beneath; to the south of the site this gave way to chalk gravel.

DISCUSSION

Dating the Boulevard Post Mills

From the pottery found resting on the old land surface and mixed in the brown soil of the mound, it would appear that the early mill was constructed at the end of the 15th century. A thin layer with Cistercian and imported stone wares, from near the surface of the brown soil suggests an occupation of about 40 years.

The date for the later mill is less certain as no pottery was located in the foundation trenches. However, it was certainly later as the foundation trenches had cut through the mound.

A property list, written in about 1538[2] mentions all the mills in the township belonging to Bridlington Priory. One of these mills was called Bridge Mill and could refer to the Boulevard site, especially as the Gypsey Race was situated a few yards south of the mound and a bridge might thus have been near at hand. A later document, dated 1591,[3] also mentioning mills in Bridlington, states that Bridge Mill was in a derelict condition.

From both archaeological and documentary evidence it would seem probable that the early mill was called Bridge Mill and the property of Bridlington Priory;[4] the mill may have been destroyed at about the time of the dissolution of the monastery in 1539. Soon after the destruction of the early mill a second mill was built on the same site, but it had become derelict by 1591. Shortly after this date the mill was probably dismantled and the foundation beams taken up.

Until the middle of the 19th century there were in existence many post mill sites on the Wolds, some of which were recorded by Mortimer.[5] These structures can generally be divided into two groups, the cross embankment and the mill mound.[6] However, there are other types in the form of mills with either 'Y'-shaped or 'H'-shaped embankments, and also mills built only on a large centre post, the cross beams having been omitted.

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[2] E. Mellor, *ibid.*

[3] County Record Office, Beverley, E178/2735.

[4] Of the five mills in Bridlington at the time of the dissolution of the Priory two were water mills and three were wind mills, one in Hilderthorpe, one in East Field (now the Bempton Lane area) and one called Bridge Mill. See numerous references in J. S. Purvis, *Bridlington Charters* (1926).

[5] J. S. Mortimer, *Forty Years Researches in British & Saxon Burial Mounds* (1905), p. 338.

[6] C. Monkman, 'Medieval Post Mill Sites at Helperthorpe, Fimber & Swinton', *Y.A.J.*, XI (1923), p. 70.

A few embankment crosses were very large and this could be explained by splicing timbers together where the top soil of the Wolds was thin. Some of these foundations were made more secure by digging trenches in the solid chalk in which the beams were placed and then covered with a bank of clay, soil and stones (Appendix). With mill mounds, it seems that most of the foundations were laid on the old land surface and the beams weighted down with boulders. The tip of the centre post was sometimes strengthened by placing boulders at the base of the post hole to stop subsidence. The foundations were then covered with clay and soil. The 'Y' and 'H'-shaped foundations may have served the same purpose as the cross embankment and the mill mound, but the latter was probably a variant of the 'Y'-shaped foundation and possibly carried a pair of mills.

The fourth type of mill, constructed only on a large centre post, was found at Rillington in the early 1950's.[7] Here the cross beams had been dispensed with and the post had been strengthened by being placed in a stone-lined pit that was covered by a substantial mound of clay and soil.

Some local mill sites were built over earlier occupation, from Prehistoric to Anglian, and at least one mill mound used a Bronze-Age barrow.[8]

Acknowledgements. The writer wishes to thank T. G. Manby for writing the discussion on the prehistoric occupation of the site and for helping to excavate the neolithic pit; Messrs. J. G. Hurst and S. A. Moorhouse for reporting on the stonewares from the Bridlington district; J. Walker who acted as site photographer and helped the writer to collect material during the levelling of the mound; Messrs. C. and E. Grantham, I. Smith and Mrs. J. Mellor who helped to excavate the Neolithic pit and S. T. Thompson, who assisted with the excavation, checked the final report and proof reading.

THE FINDS: MEDIEVAL AND LATER

The Pottery (Fig. 4)

All finds are from the brown soil of the mound, except where otherwise stated.

1. Rim of bowl from old land surface. Hard, fine sandy fabric, brown-buff exterior surface, light grey core, dark grey interior surface with soot adhering.
2. Rim of dish from old land surface. Hard, fine sandy fabric, brown-grey exterior surface, light grey core, black interior surface.
3. Rim of cooking pot. Soft, sandy fabric, buff to orange interior surface, light grey core, grey-buff to black exterior surface.
4. Rim of cooking pot. Hard, sandy fabric, grey-buff to orange interior surface, light grey core, dark grey interior surface.
5. Rim of cooking pot. Soft, sandy fabric with some quartz grains. Buff interior and exterior surfaces.
6. Neck of jug. Hard, sandy, grey fabric with mottled green and brown glaze on exterior surface.
7. Jug handle of fine, soft, pink fabric. Mottled yellow, green and orange glaze over most of surface.
8. Foot of skillet or jug. Hard, fine, grey fabric covered with dark and light green glaze.
9. Rim and handle of jug. Fine, hard fabric. Cream to black interior surface, grey core, buff exterior surface with mottled yellow-green and brown glaze.
10. Jug handle of soft, sandy light red fabric with grey core. Patches of soft yellow glaze on upper surface.
11. Body sherd from bung-holed pot of hard, sandy fabric. Dark buff interior surface, grey core, light to dark buff exterior surface with spot of yellow glaze.
12. Rim of jug with hole drilled through neck. Fine, soft fabric, cream to black interior surface, light grey exterior surface covered with apple-green glaze.
13. Jug handle of fine, hard, red fabric covered with dark green to orange glaze.
14. Butter pot of fine, hard fabric. Grey core with white interior and exterior surfaces, both covered with mottled green, yellow, orange and brown glaze. Combed decoration on exterior surface.
15. Rim of cooking pot of hard, fine sandy fabric. Grey core, light red surfaces with splashes of mottled green, orange and purple glaze.

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[7] N. A. Huddleston, *History of Rillington* (1955), pp. 17 and 20–22.

[8] Mortimer, *op. cit.*

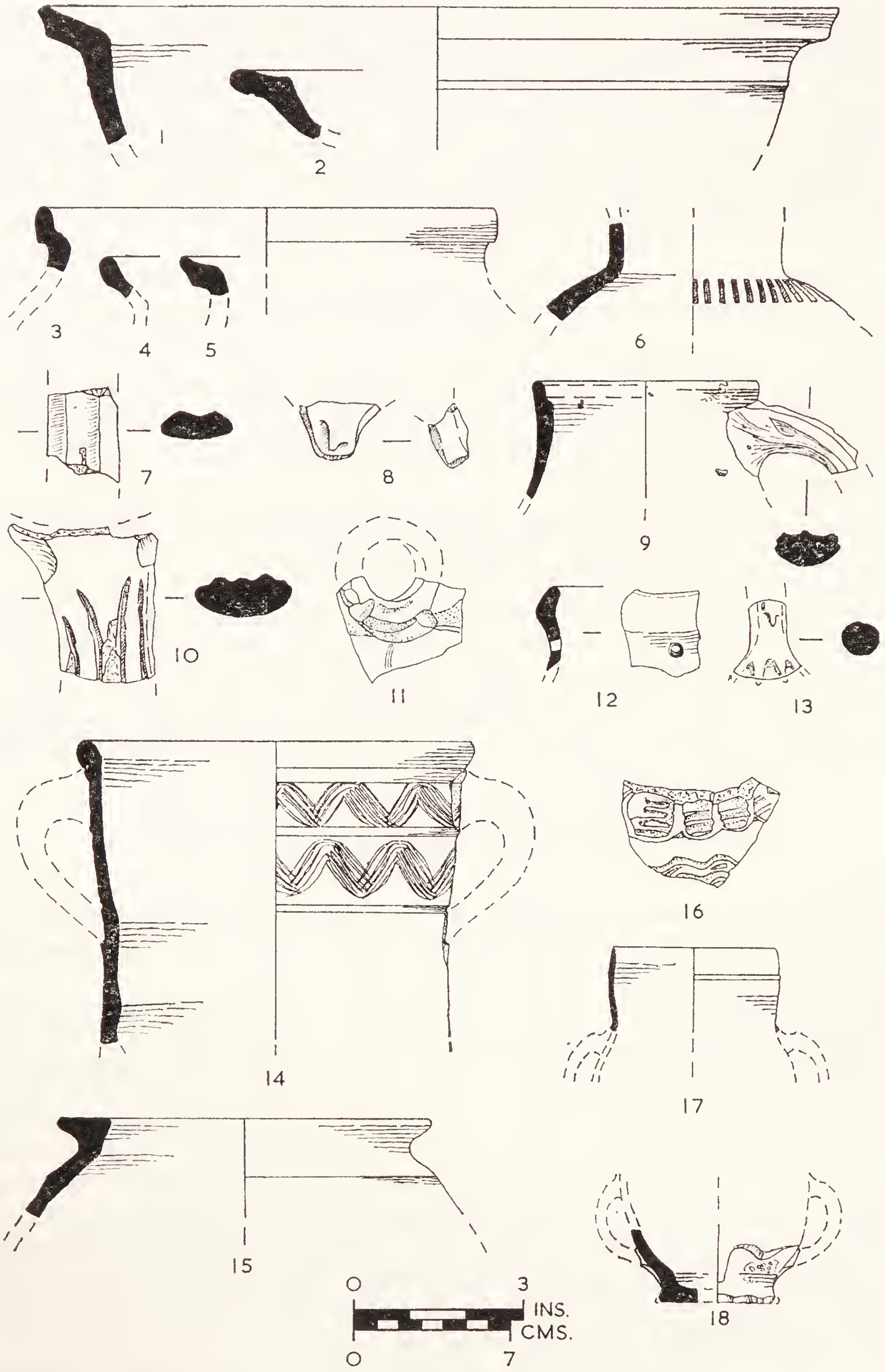

FIG. 4. Medieval and Post Medieval Pottery.

16. Body sherd of jar. Hard, fine, dark grey sandy fabric. Exterior surface decorated with combed wavy line, under combed strip, covered with purple glaze.
17. Rim of Cistercian Ware cup in hard, fine red fabric. Both surfaces covered with mottled brown, black and silver glaze.
18. Base of Cistercian Ware cup in fine, hard red ware. Both surfaces covered with uneven and pitted, black, purple and silver glaze.
19. Body sherd of Cistercian Ware cup (not illustrated) of fine, hard purple fabric. Both surfaces covered with black glaze. Exterior surface decorated with yellow strips.
20. Imported Stone Ware (see report below).

IMPORTED POTTERY FROM THE BOULEVARD AND OTHER SITES IN THE BRIDLINGTON DISTRICT

By J. G. Hurst and S. A. Moorhouse

Raeren Stoneware Mugs (Fig. 5, Nos. 1–4)
Boulevard, Bridlington

13 stoneware sherds came from the base of the top soil immediately above the brown soil level 2a, and can be regarded as a homogeneous group, all coming from the form of mug reconstructed in Fig. 5. They can be attributed to the Raeren factories and are generally dated to the first half of the 16th century[9] although they were still being discarded as late as the early 17th century;[10] evidence is accumulating for quantities being imported into this country in the last quarter of the 15th century.[11]

1. Four sherds from the same vessel in a dark grey stoneware with purply iron inclusions, internally glazed a dull bronze-brown and externally in a light grey and mottled brown, both surfaces having small purply iron specks, as in the body. The two joining base sherds, forming two thirds of the circumference, have lost the thumbed frilled foot.

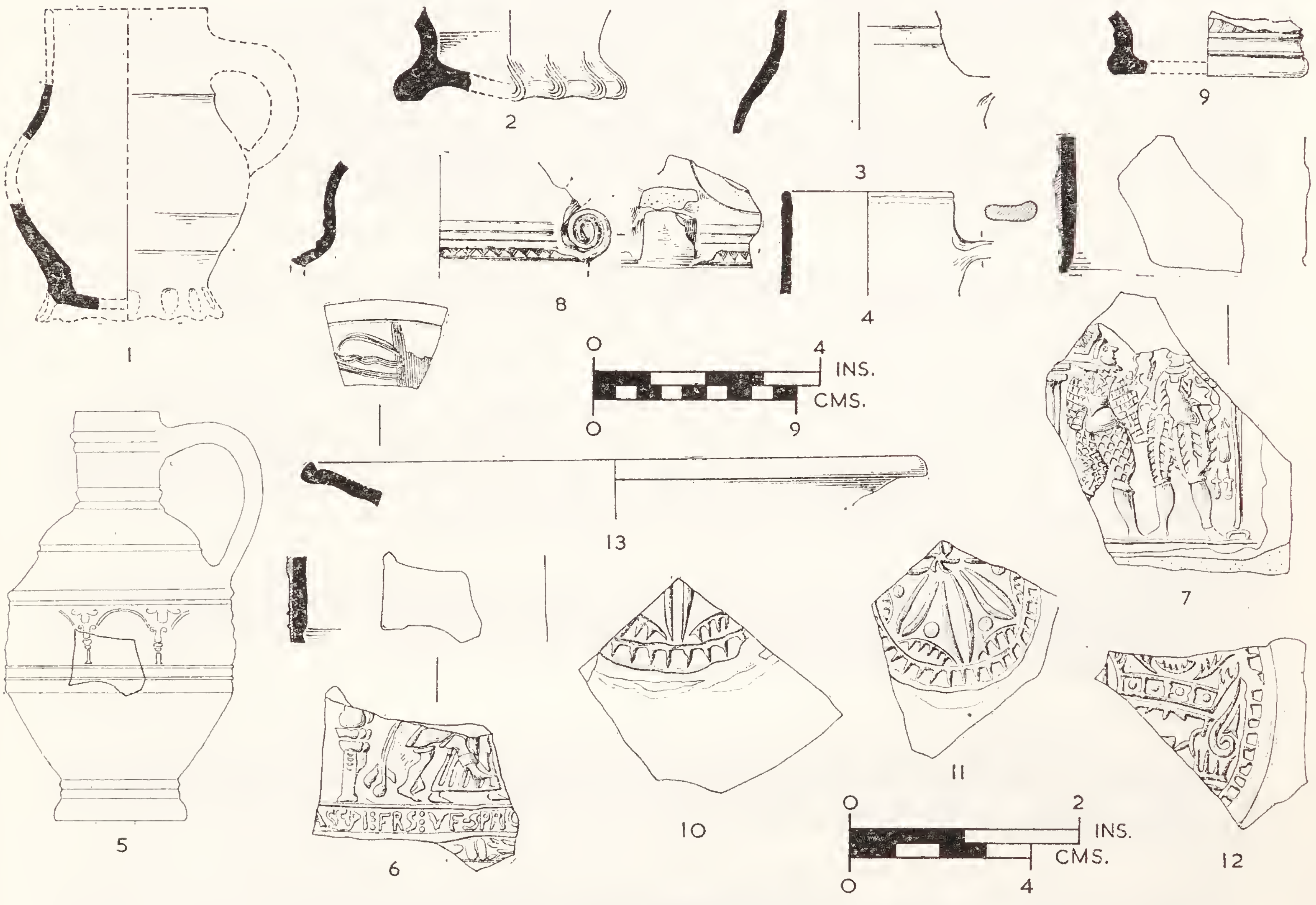

Fig. 5. Imported stoneware.

2. Base with pronounced thumbed frilled foot from a larger, though similar form of mug to no. 1 above, in a very light brown stoneware with dark blueish grey outer margin only; internal dull shiny grey glaze, external shiny yellow-brown glaze.

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[9] Originally discussed in B. Cunliffe, *Winchester Excavations* (1949–60), I, Winchester (1964), pp. 142–3.

[10] From Westminster Abbey in a group *c.* 1600, *Antiq. Journ.*, XL (1960), p. 192, Fig. 2, No. 7; and The More, Rickmansworth, in a 1600–50 context, *Arch. Journ.*, CXVI (1959), p. 172, Fig. 14, Nos. 11 and 16. For a discussion of recent finds and dating see J. G. Hurst in L. Keen 'Excavations at Old Wardour Castle, Wiltshire', *Wilts. Arch. Mag.*, LXII (1967), p. 74. Bridlington Priory was dissolved in 1538 and presumably the Priory buildings soon fell out of use providing a useful terminal date for the group.

[11] Evidence from the Southampton Port Books, from information supplied by R. G. Thompson.

There were eight other sherds too small for illustration including a body sherd with the base of a handle attached in a light brown stoneware with an external bronze-brown glaze, all from the form represented by no. 1 above.

Two other sherds of Raeren stoneware of similar form have been found in the Bridlington area and although not stratified are useful for distribution purposes.

Danes Dyke, Flamborough

3. Part of the neck and shoulder, with the base of the handle attached, in a light brown stoneware with faint blueish-grey margins and external dull shiny brown glaze. Acc. No. 1968.

Low Caythorpe, Rudston

4. Rim and neck, with upper handle scar, in a dark grey stoneware with internal brown surfaces and external light grey glaze with bronze-brown patches. Acc. No. A71.69.

Late Raeren and Early Westerwald Jugs (Fig. 5, Nos. 6–9)

Jugs of this basic form, reconstructed as no. 5, are typical of the late Raeren and early Westerwald industries of the late 16th and early 17th centuries. Dated Raeren examples range from the 1570's[12] to well into the first decade of the 17th century[13] while Westerwald types date from the 1590's.[14] The cobalt blue decoration is more typical of the Westerwald products, Raeren vessels normally being in variations of a bronze-brown colour. Very little is known about the transitional products of the two centres,[15] but on the outline above it may be suggested that no. 7 is a typical late Raeren product of the last quarter of the 16th century while nos. 8 and 9 have more affinities with the Westerwald vessels of the early 17th century. No. 6 is more difficult, as the Peasant Dance scenes are common on Raeren products,[16] but the cobalt blue suggests Westerwald; the piece can be dated, however, to the late 16th or early 17th centuries.

All sherds are from a vessel of similar form to no. 5, a reconstruction showing sherd no. 6 in position.

Danes Dyke, Flamborough

6. Fragment from the middle section of a jug, as reconstructed in no. 5, in a fine light brown to grey fabric with smooth internal light orange-bronze colour. Moulded on the outside are the remains of a continuous frieze depicting the Peasant Dance with a background of bright cobalt blue. Jugs of this type usually have a legible monogram beneath the frieze describing the Dance, but the present example appears to be an illegible non-descript collection of letters.

Danes Dyke, Flamborough

7. Sherd from the vertical middle section of a jug in a dark grey fine smooth fabric, moulded externally with an arcaded panelled frieze of (?) courtiers; covered externally in a bronze-brown salt glaze and internally a light blueish-grey colour.

Bempton near Bridlington

8. Large sherd from the upper part of a jug with the base of a handle scroll attached with wavy line decoration on the upper flange and the remains of circular (?) rosettes on the upper curve. The fabric is a light smooth brown with an internal and external light grey glaze with external bands of deep cobalt blue.

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[12] Gisela von Bock in *Volkskunst im Rheinland,* Furherund Schriften des Rheinischen Freilicht-museums in Kommern, IV (1968), p. 201, dated 1575 and 1577, and A. Klein, *Rheinisches Steinzeug des 15. bis 18. Jahrhunderts,* Darmstadt (1949), Plate 16 and 17, both dated 1576. The basic works on German Stoneware are O. van Falke, *Das Rheinisches Steinzeug* (Berlin 1908), which establishes the sources for most of the basic types, and K. Koetschau, *Rheinisches Steinzeug* (Munich, 1924), a catalogue of the Hetjens collection in Dusseldorf, which is most valuable for its illustrations. There has been little further work in the past 50 years but there is now increased interest in stone-ware as evidenced by the recent exhibition held at Kommern during 1968 and 1969, the catalogue of which is referred to above, titled *Volkskunst in Rheinland,* the stoneware being by Gisela von Bock. For English readers there is M. L. Solon, *The Ancient Art Stoneware of the Low Countries and Germany,* London 1892, but the text is out of date and the identifications no longer accurate. The best source is still E. Hanover, *Pottery and Porcelain,* London, 1925. In Vol. 1 the section on Stoneware is in fact a most useful summary in English of Falke (above).

[13] Gisela von Bock, *op. cit.* in note 1, p. 74, No. 208 and p. 73, dated 1607.

[14] *Ibid.,* p. 85, No. 241 and p. 84, dated 1596.

[15] For the migration of potters from Raeren to Westerwald *c.* 1590, see K. Koetschau, *Rheinisches Steinzeug,* Munich, 1924, pp. 46–53.

[16] Gisela von Bock, *op. cit.,* in note 1, p. 74, No. 207 and p. 73, dated 1596 and K. Koetschau, *op. cit.,* note 7, pl. 42, right, dated *c.* 1600.

Marton Village

9. Base in light brown fabric with internal and external blueish-grey glaze with external light blue mottling and a uniform band of deep cobalt blue between two ridges above the footring. A group of vertical flutings spring from the band. This type of decoration is common on jugs of this form having either grooves or, as in this case, a group.

French Bellarmine Medallions (Fig. 5, Nos. 10–12)

Stamps of this form are found on Bellarmine bottles from the late 16th century until well into the second half of the 17th century.[17] The complete forms, although falling into readily identifiable types, are difficult to date within close limits as many run concurrently and have long lives. Until more work is done on the life span of particular moulds, their sources and the combinations of vessel form, mask and medallion stamps, little can be said as regards dating of the present group other than to assign them to a general date in the first half, although possibly extending into the latter half, of the 17th century.

Binsdale, Boynton

10. Sherd from the lower part of a Bellarmine bottle in a fine fabric with dull creamy-grey internal surface and externally decorated with the lower part of a rosette medallion covered in a dull shiny bronze salt glaze.

Danes Dyke, Flamborough

11. Body sherd from the upper part of a Bellarmine bottle in a fine deep grey fabric with a grooved internal light yellow-brown surface; on the exterior, the complete upper half of an oval rosette medallion in a dark brown glaze.

Low Caythorpe, Rudston

12. Body sherd from the upper part of a Bellarmine bottle in a fine grey fabric with internal light creamy-brown surface and externally part of an armorial medallion bearing Arms depicting a crown, covered in a light grey glaze with patchy light brown mottling over the medallion.
    Two other sherds, not illustrated, have come from West Huntow near Bridlington. Both are plain body sherds in similar fabrics and glaze to those described above and date generally to the 17th century.

Beauvais Sgrafitto (Fig. 5, No. 13)
Boulevard, Bridlington

13. Rim and shoulder sherds from a shallow dish in a fine light buff fabric with a dull creamy exterior, covered internally with a creamy slip extending slightly over and under the rim, through which the *sgrafitto* design is cut. The inner surface is covered with a clear lead glaze giving the slip a dull orange and the *sgrafitto* a pale creamy yellow colour. Dishes of this type are thought by the French to start in the latter half of the 16th century,[18] but the evidence from this country would suggest a date in the first half, as is suggested by the present piece, dated before 1538.

Iron objects (Figs. 6 & 7)

All finds are from the brown soil of the mound, except where otherwise stated.

1. Horse-shoe from chalk ramp. Rectangular in section with six T-sectioned nails still in position.
2. Part of a horse-shoe associated with Cistercian Ware pottery.
3. Part of a horse-shoe associated with Cistercian Ware pottery. Similar to no. 2, but worn at the toe; one nail still in position.
4. Part of a trace consisting of two linked rings and trace-end.
5. Turret with bolt still in position. The end of the bolt has been forged to form a ring.
6. Iron ring, rectangular in section and formed by forging together the ends of an iron strip.
7. Rowel spur associated with Cistercian Ware pottery. One terminal is missing, but the other holds an iron hinge.
8. Prick spur. One of the twin-holed terminals is missing, but the other holds one of a pair of hinged rivets.
9. S-shaped hook made from a length of circular-sectioned iron rod.
10. Rowel from a spur associated with Cistercian Ware pottery.
11. Belt buckle associated with Cistercian Ware pottery. The pin is missing, but the buckle was fixed to the belt by three tangs, turned to form rings.
12. Circular stud chamfered around circumference. The stud has been fixed to another object by means of a dove-tailed joint.
13. Knife blade, associated with Cistercian Ware pottery, triangular in section with curved blade. The point and tang are missing, but the former position of the handle is indicated by a small lead flange on both sides of the blade.

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[17] For a brief discussion of the types see M. R. Holmes, 'The So-Called 'Bellarmine' Mask on Imported Rhenish Pottery', *Antiq. Journ.*, XXXI (1951), pp. 173–9.

[18] E. Chami 'L'Art ceramique du Beauvais', *Cahiers de la Ceramique*, XXX (1963), pp. 79–116.

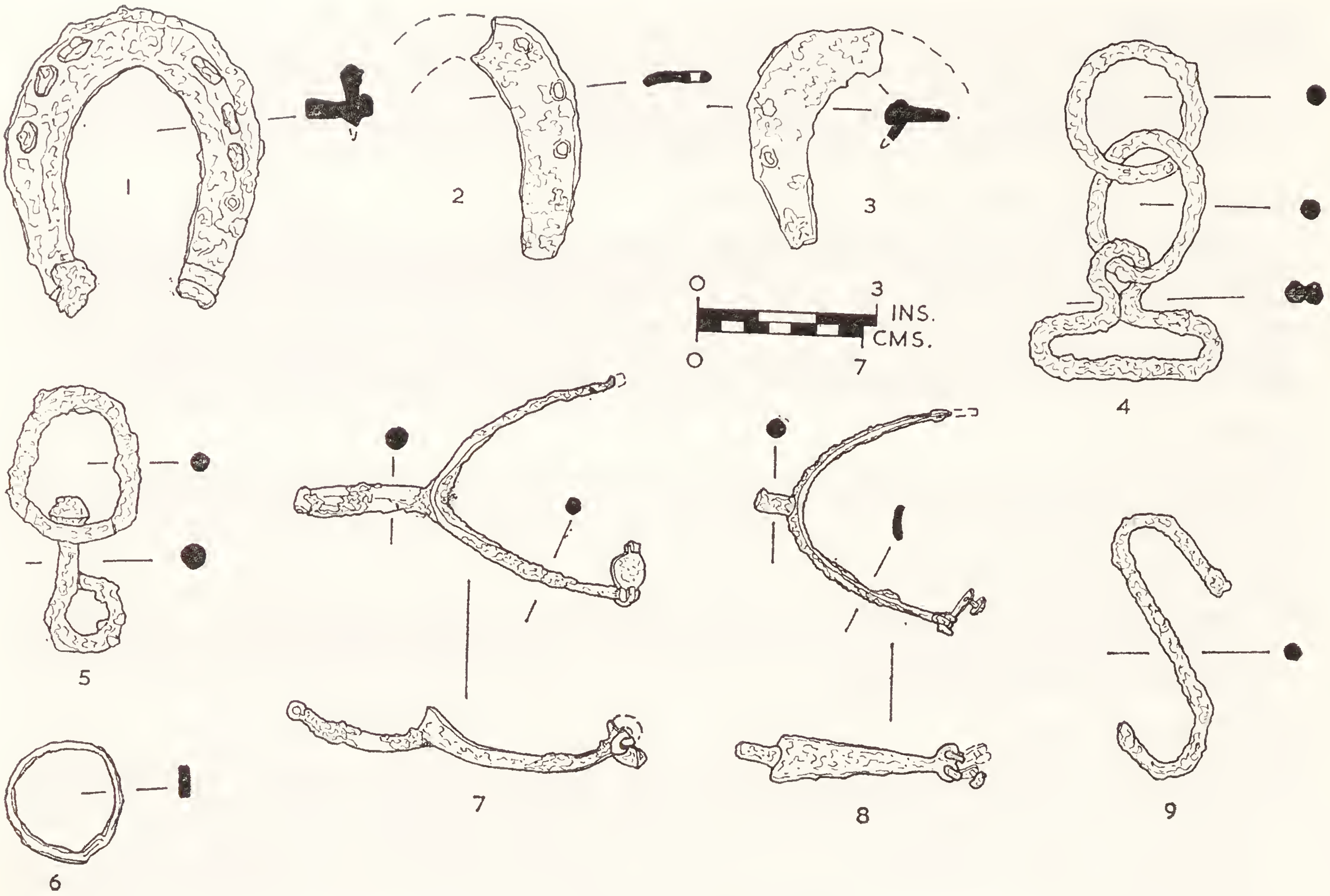

FIG. 6. Iron objects.

14. Carpenter's shell bit associated with Cistercian Ware pottery.
15. Carpenter's drill or counter-sink.
16. Needle or pin associated with Cistercian Ware pottery.
17. Nail. A large quantity of iron nails were found in the brown soil of the mound and the old land surface. The nails differed in size, but were similar in character with square-sectioned tang and large, flat, circular head.
18. T-sectioned nail probably from a horse-shoe.
19. Curved tang, roughly circular in section, and possibly decorated on one side with a quatrefoil.

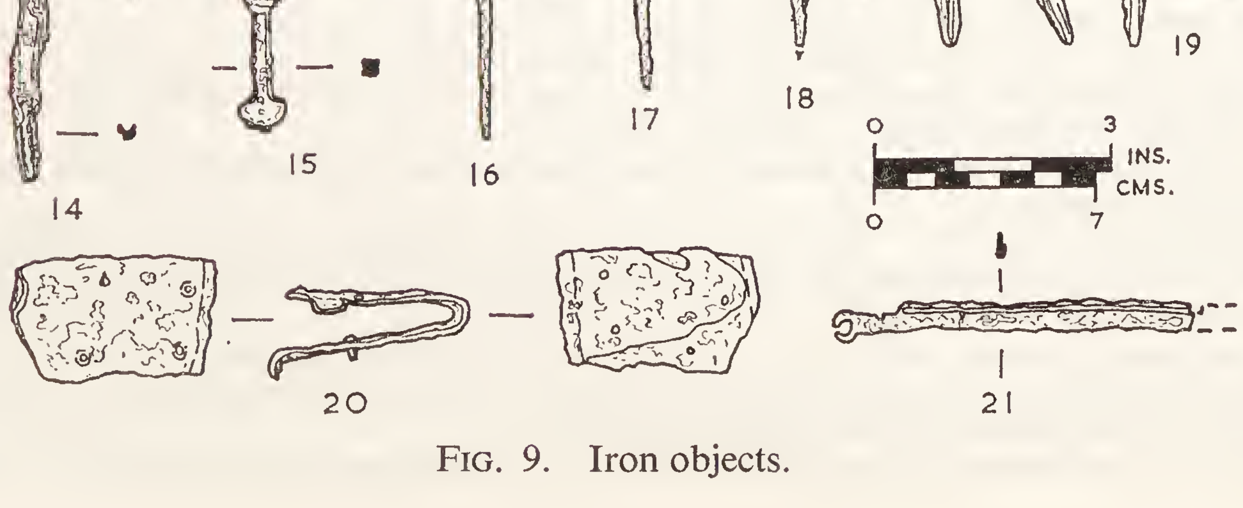

FIG. 9. Iron objects.

20. Strap-end made from re-used iron sheet. The strap-end was fixed to the strap by several rivets, one of which still remains.
21. Part of a balance arm associated with Cistercian Ware pottery.

Bronze and lead objects (Fig. 8)

1. Bronze pin covered with pitted light and dark green patina.
2. Bronze pin; shiny dark green patina. The head has been formed by twisting thin wire around the stem.
3. Bronze pin; pitted light and dark green patina. The head was formed in a similar way to no. 2.
4. Bronze needle from old land surface; shiny dark green patina.
5. Bronze staple, broken at both ends; light green patina. Scratch marks and irregular edges indicate that it was made from scrap.
6. Bronze strip, slightly twisted; apple-green patina.
7. Fragment of rolled bronze sheet; apple green patina; formed around a length of twine or leather strip.
8. Lead disc or counter cut from sheet lead. Thick grey patina on both sides.
9. Lead disc or counter cut around circumference and hammered on both sides. Slight cream coloured patina on both sides.
10. Two fragments of window lead, not illustrated, from old land surface. Both pieces badly crushed. Grey to cream coloured patina.
11. Lead button, slightly twisted, and covered with thick cream coloured patina.

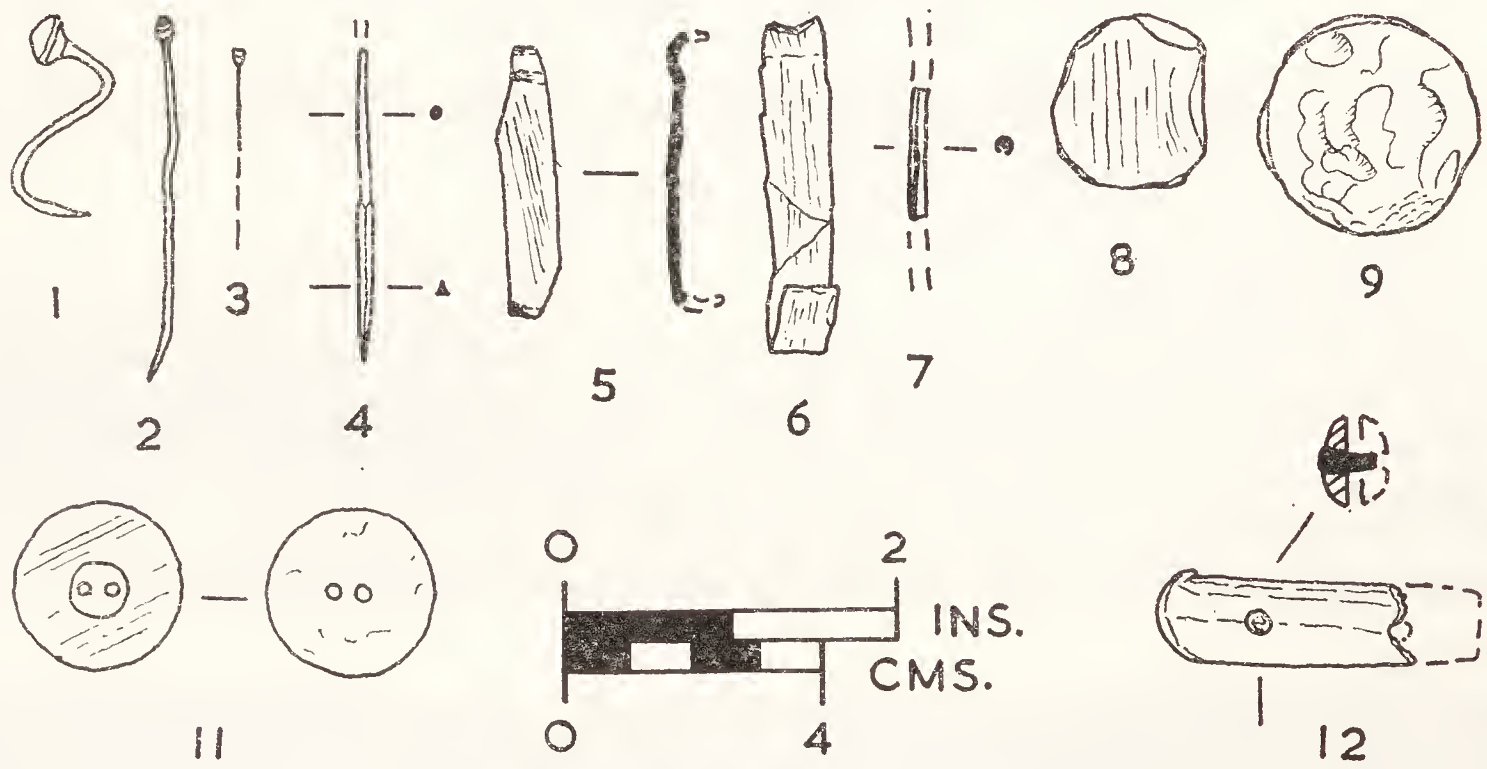

FIG. 8. Bronze, Lead and Bone objects.

Bone objects

12. Bone knife handle (Fig. 8) associated with Cistercian Ware pottery. The handle has a polished surface with some trimming marks, and was fixed to the knife blade by two iron rivets, one of which still remains.
13. Fragment of a bone needle, not illustrated, 2·3 cm. long by 4 mm. in dia. The tip has been trimmed to a point and shows some wear.
14. Three ox cannon bones, not illustrated, with chopping marks near the joint. The bones had large pieces cut from one or both sides and a hole has been drilled through the bone near the joint.

Miscellaneous objects

1. Fragments of several hand-made roof tiles, not illustrated, of fine, hard, light to dark red fabric with grey core. The tiles average 1·5 cm. thick and are finger-smoothed on the upper surface with pitted under surface.
2. Floor tile, not illustrated, of fine, hard, sandy material. Dark red to fawn fabric with dark green glaze on upper surface and one side. One side of tile is broken, but the dimensions were probably 12·5 cm. square by 30 mm. thick.
3. Hone, not illustrated, of fine to coarse millstone grit and possibly utilised from a broken millstone. The hone is triangular in plan, the dimensions being 9 cm. long by 7 cm. wide and 5·2 cm. thick. The corners have been rubbed and one side has shallow grooves probably made by sharpening knives.
4. Stone bearing (Fig. 9) made from a large beach pebble of slate. The bearing has been worn on both sides by a metal spindle.

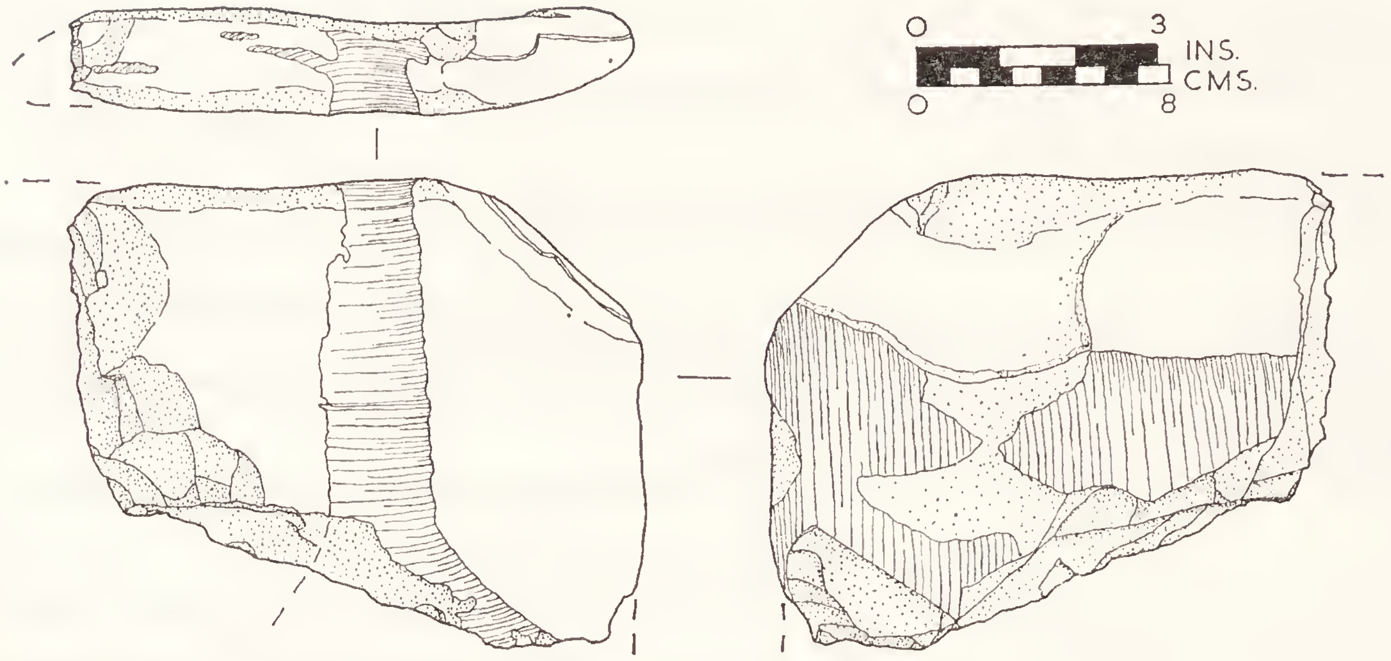

Fig. 9. Stone bearing.

THE MESOLITHIC AND NEOLITHIC FINDS

By T. G. Manby

The Mesolithic flint industry

By collection and excavation, 11.5 kg. (25 lb.) of worked flint were obtained from the old land surface and pre-mound soil. Apart from scrapers of Neolithic aspect, and some sherds of Neolithic pottery, the bulk of the material is Mesolithic in character. The Mesolithic flints were obtained from pits dug into the undisturbed sand and continued into the covering of the soil layer. While it is possible that some of the flakes from the pre-mound soil may be later in date all the flint waste is analysed together.

Raw Material

Apart from a small quantity of dense grey Wold flint, the various coloured flints, derived from the glacial deposits of the Yorkshire coast, formed the raw material. A translucent mottled brown flint was the most plentiful, followed in frequency by brown flint with a thin grey-blue patination. Red, yellow and pink flint are represented in small quantities. The mottled brown and patinated brown flints still display patches of buff nodular skin, and rolled and battered edges betray its glacial source. A small proportion are burnt and fire-cracked pieces. The occurrence of struck pebbles shows these form raw material brought to this site.

Pebbles

1. Large rectangular pebble of mottled brown flint 8.1 x 6.3 x 7 cm. Weight 454 grams (1 lb.). Battered pebble cortex, crude flakes struck-off one end. From a pit.
2. A triangular beach pebble, rolled exterior, brown flint. 8.1 x 4.4 x 2.2 cm. Weight 114 grams (4 oz.). From a pit.
3. A beach pebble of mottled brown flint, white patinated skin with battered ridges. 6.7 x 5.4 x 3.8 cm. Weight 158 grams (5½ oz.). A single flake struck-off.

Summary of Industry

Pebbles	3
Cores	57
Rejuvenation Flakes ..	55
Flakes	1557
Blades	211
Chippings	324
Microliths	33
Tools	63
By-Products	10

Cores

The cores range in individual weight from 5.9 to 73.2 grams ($\frac{1}{4}$ to $2\frac{1}{2}$ oz.). The largest cores weigh 72.6 and 73.2 grams ($2\frac{1}{2}$ oz.) and are of Wold flint respectively. Total weight of cores 1.615 kilograms. Single platformed (AI) and multiplatformed cores predominate and are equally numerous.

	Mottled Brown	Brown Patinated	Pink Flint	Burnt Flint	Wold Flint	Total
A. *Single Platformed*						
1. Partially struck ..	11(2)	1(1)	—	2	—	14
2. Struck all round ..	3	—	1	—	—	4
B. *Two Platformed*						
1. Platforms Parallel ..	—	2	—	—	—	2
2. Platforms at 45% ..	2(1)	—	—	—	—	2
3. Intermediate forms ..	2	—	—	1	—	3
C. 1. Three Platforms ..	10	2	1	—	1	14
2. Four Platforms ..	2	1	—	—	—	3
D. Keeled Type	8(1)	1	—	—	—	9
E. Unclassified	4	2	—	—	—	6
Total ..	42	9	2	3	1	57(5)

N.B. numbers converted to core scrapers shown in brackets.

Core Rejuvenation Flakes

	Mottled Brown	Patinated Brown	Red	Total
A. Struck on the same plane as the platform ..	1	—	—	1
B. Struck at right-angles to the patform	36	5	1	42
C. Struck obliquely to the platform	1	—	—	1
D. Struck from base to remove apex	8	—	—	8
E. Ridge flake with battered keel	1	—	—	1
F. Ridge flake with partially battered keel	1	1	—	2
			Total ..	55

Flakes, Blades and Chippings

Large, crude, irregular flakes with patches of cortex on the back represent the primary flakes struck off flint pebbles in the preparation of cores. Thinner, more regular pieces down to 1 cm. in length are classified as flakes and pieces with parallel sides and a length:breadth ratio of 5 : 2 are classified as blades. In this latter class are included the small bladelets, from these the microliths were prepared.

	Mottled Brown	Patinated Brown	Red	Wold	Burnt	Total
Primary Flakes	52	4	1	—	—	57
Flakes	1098	209	9	9	175	1500
Blades	139	56	3	2	11	211
Chippings	175	92	—	—	57	324
					Total ..	2092

Microliths

The series of microlith, complete and broken, consist of points and backed forms of neat Geometric outline.

Obliquely Blunted Points	2	(Fig. 10, Nos. 17 & 18).
Backed Points	9	(Fig. 10, Nos. 11, 19–21 & 26–31).
Rod	2	(Fig. 10, No. 10).
Scalene Triangles	5	(Fig. 10, Nos. 1 & 2).
Sub. Triangles	2	(Fig. 10, Nos. 7 & 12).
Lozenge	1	(Fig. 10, No. 23).

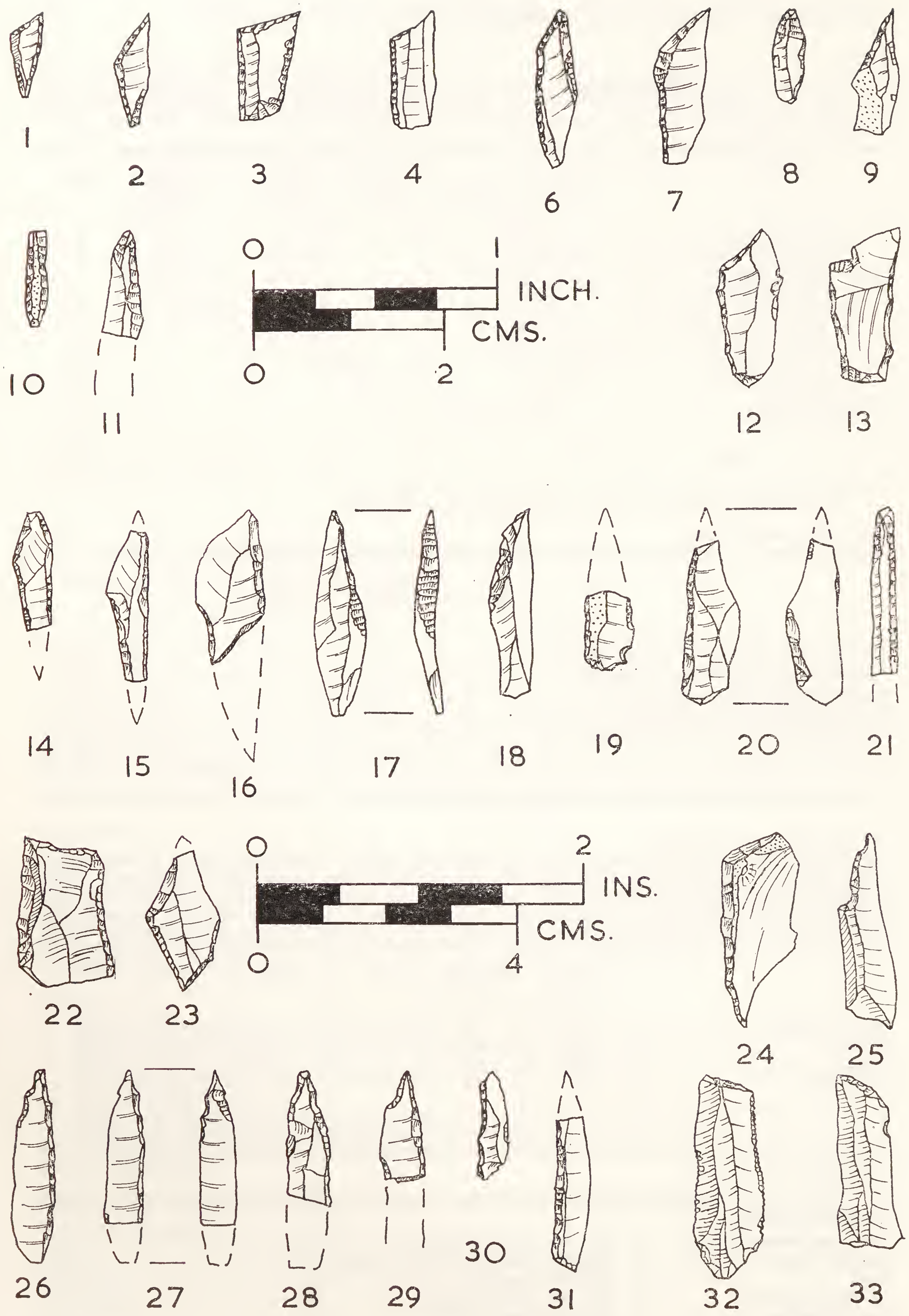

FIG. 10. Mesolithic Flint Implements.

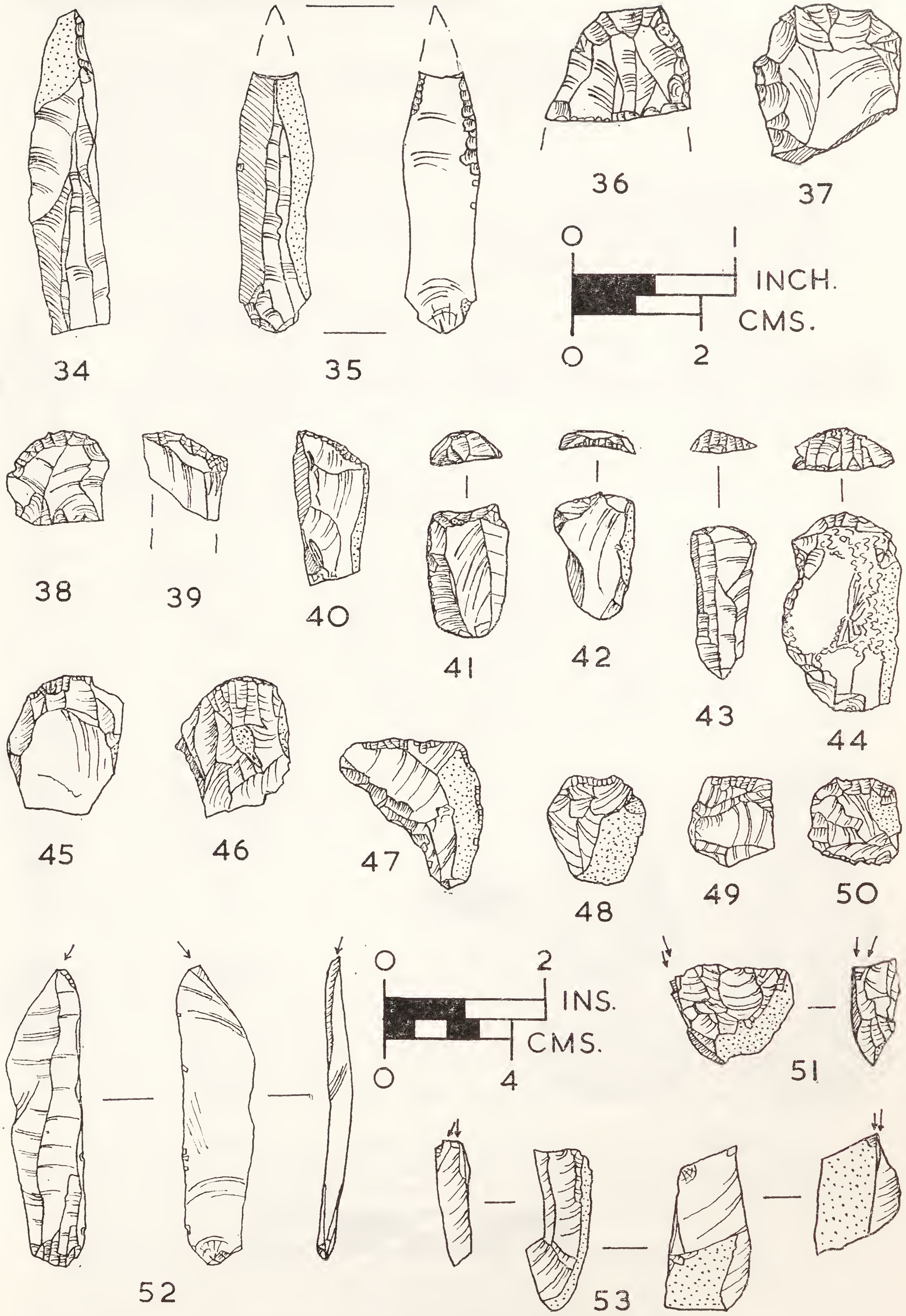

FIG. 11. Mesolithic Flint Implements.

Ultra-long Tranchet ..	3	(Fig. 10, Nos. 14–16).
Short Tranchet	1	(Fig. 10, No. 13).
Unclassified	4	(Fig. 10, Nos. 6, 8, 9, 24 & 25).
Rhomboid	2	(Fig. 10, Nos. 3, 4).
Truncated Blades	2	(Fig. 10, Nos. 32–33).

Tools

1	Plane scraper (not illustrated).
5	Core scrapers (Fig. 11, Nos. 45–6).
3	Long-end scrapers, one on a primary flake with a battered keel (Fig. 11, Nos. 43–4).
9	Broad, round-end scrapers (Fig. 11, No. 37).
3	Truncated flake scrapers (not illustrated).
3	Oblique end-scrapers (Fig. 11, Nos. 39 & 40).

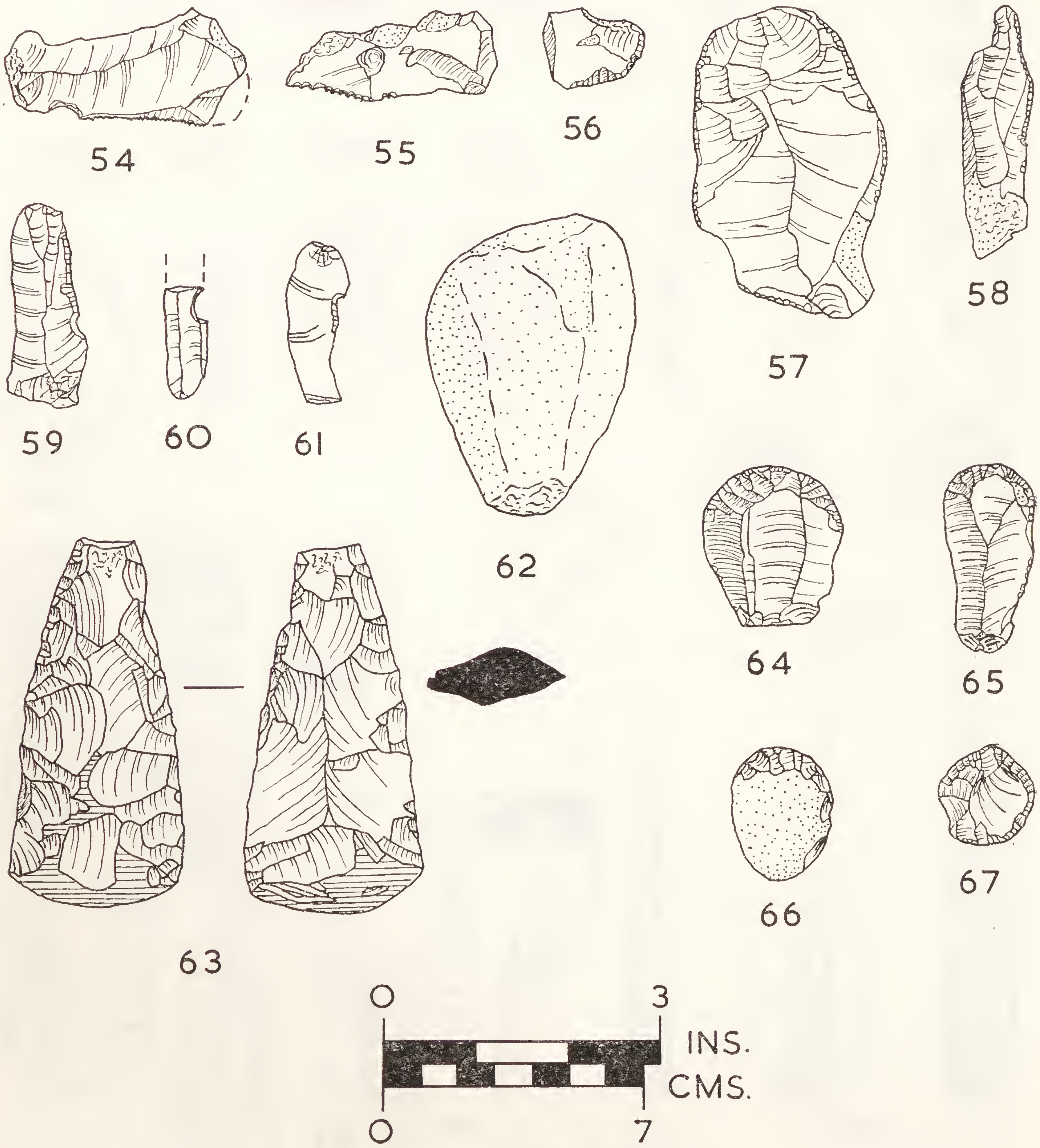

FIG. 12. Mesolithic and Neolithic Flint Implements.

2 Hollow scrapers (Fig. 11, Nos. 41–2).
11 Irregular scrapers (Fig. 11, Nos. 47–50).
1 Side scraper (Fig. 11, No. 36).
5 Angle gravers (Fig. 11, No. 51).
1 Angle graver with joining spall (Fig. 11, No. 53).
1 Blade graver on a long blade of mottled flint (Fig. 11, No. 52).
6 Serrated edged flakes (Fig. 12, Nos. 54–5).
6 Edge-utilised flakes (Fig. 12, Nos. 56–7).
5 Edge-utilised blades (Fig. 12, Nos. 58–9).
2 End retouched blades (Fig. 11, Nos. 34–5).

By-Products
1 Micro-burin (Right Hand notch) (not illustrated).
6 Snapped-off bulbs (not illustrated).
2 Snapped-off blade types (Fig. 12, No. 60).
1 Noticed Blade (Fig. 12, No. 61).

Flint Axe

Broken cutting edge of an axe of grey Wold flint. Elliptical section, battered sides. 5.4 cm. long x 4.8 cm. wide (not illustrated).

Stone

Hammerstone of dense brown quartzite. Pear-shaped, battered at the narrower end, 7.9 x 5.6 x 3.8 cm., 226.3 gm. (15 oz.). From a pit. (Fig. 12, No. 62).

Hammerstone of basalt, 7.3 x 5 cm., 130 gm. (5 oz.) (not illustrated).

Commentary

The mesolithic industry of the Boulevard site represents the occupation of a low site beside a stream. The status of the Gypsey Race at the time of the occupation is unknown, but it is likely to have been a permanent stream. The industry is characterised by neat geometric microliths especially scalene triangles and backed forms, supplemented by tranchet forms. The existence of this particular mesolithic industry on the Yorkshire Wolds has only been recognised within the past decade. The majority of sites are represented by surface finds of microliths and typical cores and re-juvenation flakes collected by Messrs. C. & E. Grantham of Driffield. These sites are on the level summits of the Wolds, including Rudston Wold three miles south-west of the Boulevard site. They have also located one site on a gravel terrace overlooking the Gypsey Race near Burton Fleming. The only excavated mesolithic sites on the Yorkshire Wolds are at Kilham[19] and Octon[20] where the industries were recovered from the old soils preserved beneath the mounds of later barrows. At the Kilham long barrow an extensive industry has been recovered from the pre-barrow soil, associated with pits and hearths.

The Geometric industry of The Boulevard and other Wold sites has parallels in the more numerous flint sites on the North Yorkshire Moors,[11] on the Yorkshire Pennines,[22] and in North Lincolnshire.[23] The total number of microliths represented at The Boulevard site is comparatively small and too much significance cannot be given to the occurrence of individual forms of microlith. As these points must represent losses on the workshop floor during manufacture, or discards after use, it is possible that the full range of forms produced are imperfectly represented. The combinations of the various types of microliths used to tip an arrowshaft are also imperfectly understood and it may be that some specialised forms may have been employed for particular kinds of game.

A comparable industry to The Boulevard is provided by the extensive industry of White Gill, on the North Yorkshire Moors, although scrapers and gravers are not so numerous.[24] The low proportions of these tools in the assemblages is a feature of all the

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[19] Excavated by T. G. Manby (1965–69).

[20] Excavated by T. C. M. Brewster, *Archaeological Excavations*, H.M.S.O., 1968, 1969, p. 14.

[21] J. Radley, 'The Mesolithic Period in North-East Yorkshire', *Y.A.J.*, XLII (1969), pp. 314–27.

[22] Petch, J. A., *Early Man in the District of Huddersfield*, 1923.

[23] H. Dudley, *Early Days in N.W. Lincolnshire*, Scunthorpe, 1949, pp. 35–41.

[24] Radley, *op. cit.*, p. 319.

Northern moor sites. At White Gill, where fine slender microliths predominate, there is the same high frequency of backed points and scalene triangles with some tranchet forms that is present at The Boulevard. The dating of the Geometric microlithic industries is still imperfectly known in the British Isles. An Industry of this type has been excavated by J. Davies at Ickornshaw Moor, high in the Pennines near Keighley, and a radiocarbon date obtained from it of (Q–707) 6150±150 B.C.[25] The industry of Peacock's Farm, in the Cambridgeshire Fens, has an extensive obliquely blunted point element[26] associated with Geometric microliths and a radiocarbon date of (Q–587) 5650±150 B.C.[27]

The environmental and dating evidence from the North Yorkshire Moors has recently been discussed by Radley. On the moorlands the geometric industries are associated with peat deposits of Zone VIIa at White Gill and Glaisdale Moor and the Mesolithic occupation was set against a background of mixed oak forest. A date for the Mesolithic industries in the moorland area in the order of 6000 to 3000 B.C., has been advocated by Radley,[28] but this must be revised in the light of the bristlecone pine calibration of radiocarbon dates and put back by at least a millennium.

Neolithic Flints and Pottery

A flint axe, flaked with polished cutting edge. Made of dense grey-brown mottled flint with orange tones. Eliptical section, battered sides, tapering butt. 9.8 cm. long x 4.6 cm. wide cutting edge, (Fig. 12, No. 63). Found in the Neolithic burial pit.

From the pre-mound surface and beneath the packing of the post mill came nine sherds of laminated structure. Crushed flint or fine calcite were used as gritting agents. Two sherds represent slightly carinated shoulders and the rest are pieces of a rounded body.

Also from the pre-mound surface came four flint scrapers with flattish pressure flaking.

An end-scraper of brown mottled flint (Fig. 12, No. 65).

A large horseshoe scraper of brown flint (Fig. 12, No. 64).

A broad scraper produced by retouching the edge of a flake struck off the top of a nodule (Fig. 12, No. 66).

A small oval scraper (Fig. 12, No. 67).

Commentary

Edge-polished flint axes with a tapering butt and eliptical section are well represented by surface finds in East Yorkshire. Locally found axes of this kind are represented in the Sewerby Hall Museum collection by finds from Sewerby, Hilderthorpe, Binsdale and Bridlington.

The skull-burial associated with this axe is an interesting feature with the stone-lined pit and burnt wooden structure. The burial pit post dates a mesolithic pit and lacks a covering burial mound. Disarticulated skeletons are a feature of Neolithic long barrow sites and skulls have been found grouped together. A group of three skulls occurred at Esh's Barrow, Greenwell's Barrow XLIX.[29] However, the burial of a skull has a magical significance of great antiquity in European folk-lore. The burial of a skull in a large grave at the Easton Down Flint Mines, Wiltshire, accompanied by a bar of flint is an obvious instance of this practice and provides a broadly contemporary parallel to The Boulevard burial.[30]

The Council of the Society is grateful to Bridlington Corporation and to the Bridlington Augustinian Society for grants towards the cost of printing this article.

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[25] *Radiocarbon.*

[26] J. G. D. Clark, 'A Microlithic Industry from the Cambridgeshire Fenland', *P.P.S.*, XXI (1955), pp. 3–20.

[27] J. G. D. Clark, 'The Mesolithic in the Cambridge Fens', *Antiquity*, XXXVI (1962), p. 10.

[28] Radley, *op. cit.*, p. 323.

[29] J. D. Hicks, 'Esh's Barrow', *Y.A.J.*, XLII (1969), p. 308.

[30] J. F. S. Stone, *Wessex*, 1958, pp. 64–5, Plate 19; 'A case of Bronze Age Cephalotaphy on Easton Down', *Man 51* (1934).

APPENDIX

List of some post-mill sites from the East Riding of Yorkshire.

Type of mill	Location	Measurements of Foundations	Finds	Date	Notes
Embankment Cross					
1.	2 miles S.W. of Driffield	30 yds. N. to S. 29yds. E. to W.	Not Excavated		
2.	¼ mile E. of no. 1.	16 yds N. to S. 16 yds. E. to W.	,, ,,		
3.	7 miles S.W. of Driffield, near Haywold.	44 yds. N. to S. 44 yds. E. to W.	,, ,,		
4.	Coke Farm, near Birdsall. 14 miles N. N.W. of Driffield.	29 yds. N. to S. 31 yds. E. to W.	,, ,,		
5.	Whin Moor Farm 12 miles N.W. of Driffield	90 yds N. to S. 100 yds. E. to W.	,, ,,		
6.	Swaythorpe, 8 miles N. of Driffield.	46 yds. N. to S. 46 yds. E. to W.	,, ,,		
7.	½ mile Est. of Burton Carr House Farm, 2 miles S.W. of Burton Agnes.	63 yds. N. to S. 44 yds. E. to W.	,, ,,		
8.	Hills Farm, Gransmoor. 1¼ miles S. of no. 7.	34 yds. N. to S. 30yds. E. to W.	Medieval pottery, nails, Iron Age pottery.	?	Excavated by C. & E. Grantham, Iron Age habitation under post mill
9.	Staxton	?	Medieval pottery, nails.	*c.* 1300– *c.* 1350.	Excavated by T. C. M. Brewester.
Mound over Cross Foundations.					
1.	Barrow no. 210, 800 yds. N. of Cowlam Church.	28′ 6″ N. to S. 46′ 6″ E. to W.	Human bone, Medieval pottery.	?	Bronze Age barrow used for mill mound
2.	Between Helperthorpe Weaverthorpe.	21′ N. to S. 21′ E. to W.	Roman, Anglian Medieval pottery.	?	Mill built over earlier occupa- occupation.
3.	Swinton	38′ N. to S. 38′ E. to W.	‘Roman’ & Medieval pottery. Bone Pin.	?	Mill built over earlier occupation.

APPENDIX *(cont.)*

Type of mill	Location	Measurements of Foundations	Finds	Date	Notes
4.	Fimber	Early mill 21′ N. to S. 21′ E. to W. Later mill 16′ N. to S. 16′ E. to W.	Medieval pottery, nails, bronze objects, split bones.	?	Two mills built on same site.
5.	Boulevard, Bridlington.	Early mill 32′ N. to S. 35′ E. to W. Later mill 28′ N. to S. 23′ 6″ E. to W.	Mesolithic Neolithic finds, Medieval pottery, nails.	*c.* 1500–*c.* 1538. *c.* 1538–*c.* 1590.	Two mills built on same site, over earlier occupation.
Miscellaneous Forms.					
1. Centre Post Only.	Thorpe Bassett, Outgang Plantation.	?	Medieval pottery, nails.	*c.* 1375–*c.* 1400.	Excavated by T. C. M. Brewster.
2. 'Y'-shaped Embankment.	15 miles N. N. E. of Driffield, opposite Cayton Hse.	Not Excavated			
3. 'H'-shaped Embankment.	½ mile West of Brandsburton	,, ,,			Foundations probably carried a pair of mills.

It is interesting to note that from the dateable evidence of the post mills the life expectancy of each mill was roughly 40 to 50 years. This could be explained by the gradual tilting of the structure with constant wind pressure, and possibly hazards such as rotting timber and wood-boring insects.

THE NEOLITHIC AND EARLY BRONZE AGE POTTERY FROM ELBOLTON CAVE, WHARFEDALE

By J. A. Gilks

ABSTRACT

The excavation of Elbolton Cave, Wharfedale, by the Rev. E. Jones of Embsay between 1888–91, and by Dr. A. Raistrick and Mary Kitson-Clark in 1920, showed that the site had been used continuously from the Later Neolithic period into the Early Bronze Age, for occupation and burials. Using Jones' published accounts of the excavations, and the section through the cave prepared by him in 1888, it has been possible to reconstruct the sequence of the deposition of the burials, and to calculate, approximately, the number of burials made in the cave. His description of the pottery is, however, sufficiently accurate to enable single and groups of sherds to be identified, and these have been assigned to their respective find spots on the section.

To understand the burial complex at Elbolton Cave more clearly, wider comparisons have been made with sites in Derbyshire and Staffordshire, and from this it is concluded that the rite of burying the dead in caves was a common practice in the North of England during the third and second millennia B.C.

I

THE EXCAVATION

The Site

Elbolton Cave, or Knavvy Noddle Hole (Nat. Grid. Ref. SE 008616), is situated a quarter of a mile south west of Thorpe (Fig. 1), at 1000 ft. O.D. The cave lies at the base of a limestone scar in a reef knoll composed of calcite-mudstone and shelly limestone,[1] and is surrounded by rough grassy pasture. The entrance to the cave is narrow, and there is a vertical drop of about 20 ft. to the floor below. In places the roof of the cave is near the surface, and other entrances are suggested by pot-holes in the immediate vicinity. The main chamber is 30 to 40 ft. in length and seven to 13 ft. in width.[2] Jones recorded that on his first visit to the cave there was a deposit of limestone rubble and sheep bones below the entrance, but nothing to suggest human occupation.

Summary of Excavations 1888–91

In 1888 Jones conducted an exploratory excavation at the cave (Fig. 2). In the upper cave earth human remains were represented by the mandible of a male (Burial B1) and the upper jaw and part of the skull of a second individual (Burial B2). Two bone pins (Fig. 5 (?) 1 and 2) and sherds of an Early Bronze Age Collared Urn decorated with lattice striations (Fig. 4. 7) were found with the disturbed burials; fragments of calcined bone were also found at the same level with sherds of the Collared Urn, but were lost in the cave.[3] By October 1888, a depth of nine ft. had been reached in the cutting. Mixed with the excavated limestone rubble, stalactites and brown clay[4] were animal bones[5], three human right femurs (Burials B3–B5) and a fibula (Burial B6).[6]

In 1889 a committee under the chairmanship of Jones raised funds to support a large-scale excavation. The excavation commenced on 19 August 1889. A grid method was

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[1] Edwards, W., and Trotter, F. M., *The Pennines and Adjacent Areas* (1954), p. 27, Fig. 10.

[2] Jones, E., 'On the Recent Explorations of a Cave at Elbolton, near Thorpe', *Proc. Yorkshire Geological and Polytechnic Society,* XI (1889), pp. 86–7.

[3] *Ibid.,* pp. 87–8.

[4] *Ibid.,* p. 89.

[5] Information kindly supplied by Dr. A. Raistrick.

[6] *Jones 1889,* p. 89; the human skeletal material and fauna recovered from the 1888–91 and 1920 excavations will form the subject of a separate report.

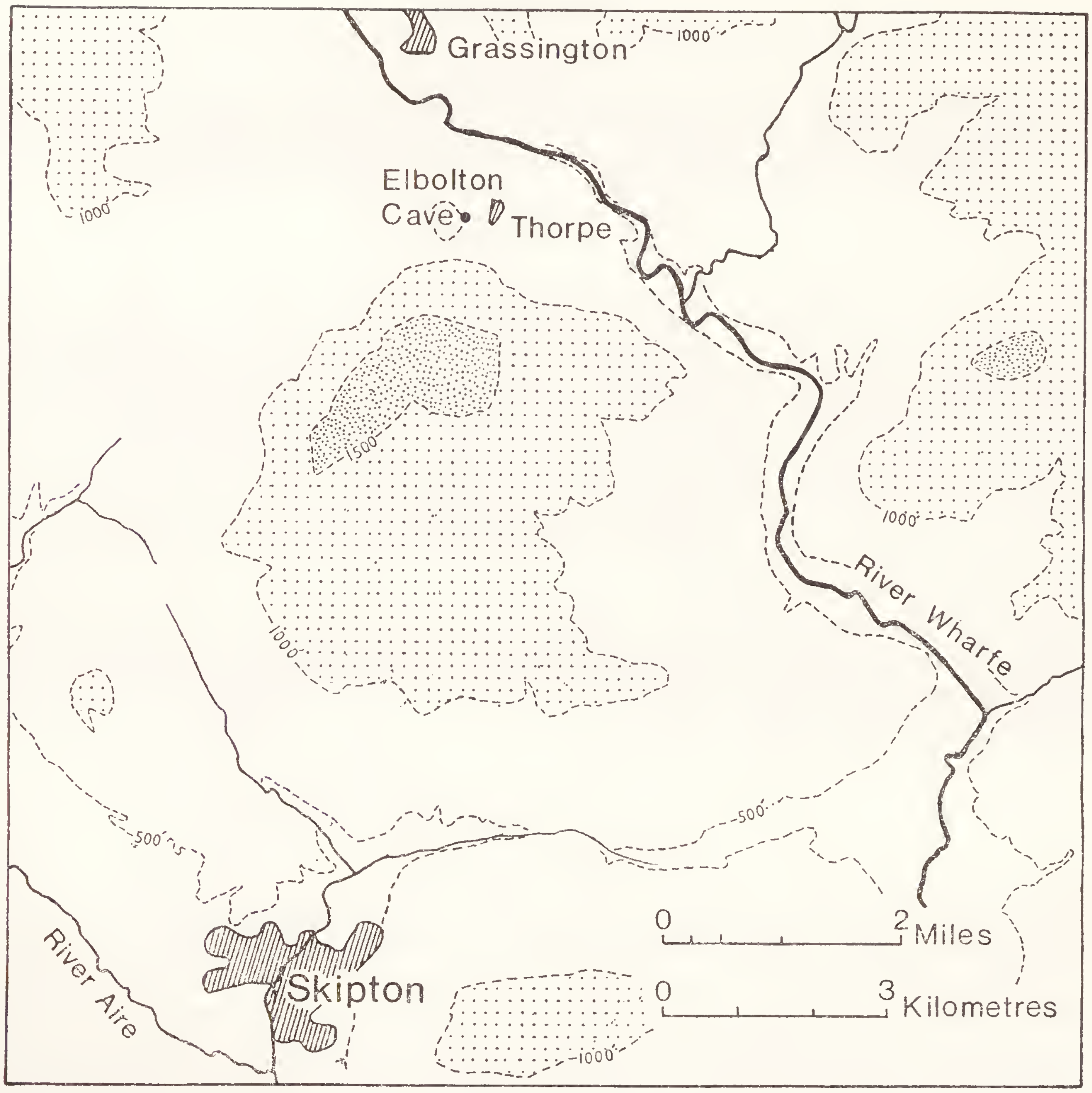

FIG. 1. The location of Elbolton Cave, (*Derived from the Ordnance Survey Map of 1913*).

employed and finds recorded on plans (now lost) for five and ten ft. from the surface. The upper cave earth, to the east and west of the 1888 excavation, varied in thickness from four ft. at the east end to 15–17 ft. at the west. Human bones (the total number of burials was not recorded) were found between four and five ft. down at the east end whilst at the west end they were at 12 ft. 6 in. down. Jones records that 12 ft. south of the datum line, and against the south wall of the cave was a nearly complete crouched burial (Burial B7); a second crouched burial (Burial B8) was found three ft. away in a recess, and a third burial (Burial B9) was located in the centre of the chamber floor. The burials were separated by blocks of limestone which formed rough cists, without capstones. Among the few animal bones found in this area, some showed signs of splitting in an attempt to extract the marrow.[7]

A hearth of clay burnt red, located at the northern end of the trench 9 ft. 6 in. from the surface, had pottery above it, which was according to Jones, 'crude, seemingly made from the clay found in the cave, and formed into circular vessels'.[8] These sherds were decorated with a lattice and herring-bone pattern (Fig. 4. 8), but finger-nail rustication was however present on some of the sherds (Fig. 3. 5 and 6). Further burials (total number not recorded) were excavated at the western end of the chamber at 13 and 15 ft. from the surface, whilst two skulls (Burials B10 and B11) were found at the eastern end. The pottery associated with the latter burials was thick, tempered with limestone fragments, and decorated with heavy triangular impressions (Fig. 3. 2).[9] By August 1890, work had commenced on the lower middle and lower cave earths; these deposits were completely void of human material and contained only late Glacial fauna.[10]

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[7] Jones, E., 'On further Explorations of a Cave at Elbolton, near Thorpe in Craven'. *Proc. Yorkshire Geological and Polytechnic Society*, XI (1890), pp. 307–9; Jones, E., 'Elbolton Cave Explorations', *Report to the British Association* (1890), pp. 817–18.

[8] *Ibid.* (1890), p. 309.

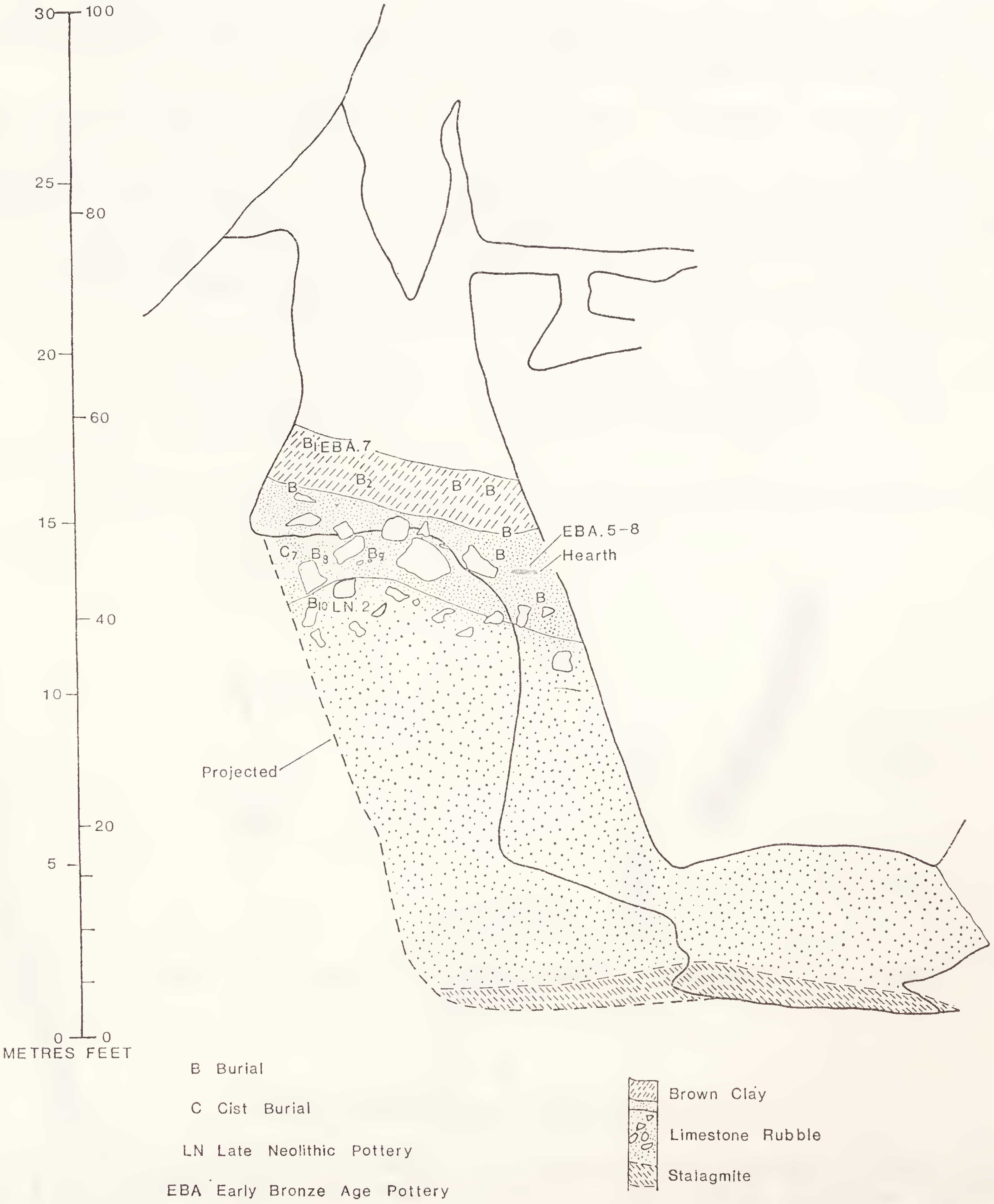

FIG. 2. Section through cave showing position of principal burials referred to in the text (After Jones and Raistrick).

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[9] Jones, E., 'Exploration of the Elbolton Cave', *Proc. Yorkshire Geological and Polytechnic Society.* XII (1892), 105.

[10] *Ibid.*, p. 106.

Summary of Excavation conducted in 1920

This involved the partial re-cutting of Jones' trench in an attempt to confirm the stratigraphy recorded on his section, and also to examine a new area in search of further evidence of Neolithic and Early Bronze Age burials and occupation. The upper cave earth, although badly disturbed, produced sherds of one of the Collared Urns (Fig. 4. 7) and fragments of human bone. Sherds of the Later Neolithic 'bowl' (Fig. 3. 2), human and animal bones were recovered from the base of the middle cave earth and to the north of the hearth recorded by Jones. The section illustrated (Fig. 2) is based on the one prepared by Raistrick and shows the position of the principal burials and one of the Early Bronze Age hearths excavated by Jones; unfortunately the precise position of the cists was not recorded.

From Jones' and Raistrick's accounts it appears that the cave at Elbolton was used throughout the Later Neolithic and Early Bronze Age periods as a place of burial and occupation. Between 1888 and 1891, at least 11 inhumation burials and one cremation burial were excavated in the upper and middle cave earths; of these, three crouched burials in the middle cave earth were in roughtly-constructed cists with a hearth and fragments of Food Vessels and a Collared Urn above them. The lowest burials B10 and B11 (Fig. 2), at the junction of the lower middle and lower cave earths were associated with some, if not all, of the Later Neolithic pottery.

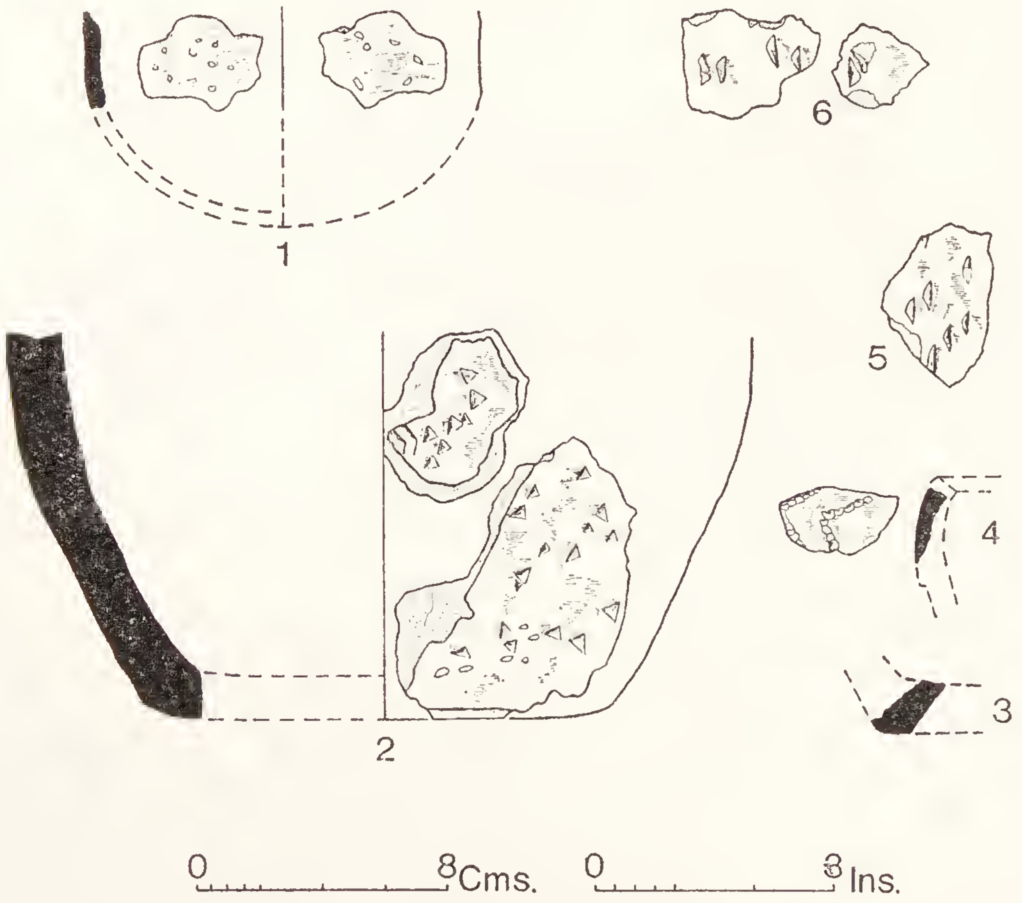

Fig. 3. Pottery from Elbolton Cave. 1 : Earlier Neolithic. 2–4 : Later Neolithic. 5 and 6 : Early Bronze Age. (¼)

II

THE POTTERY AND BONE PINS

The pottery assemblage can be divided into three groups: Earlier Neolithic, Later Neolithic and Early Bronze Age. All sherds possess sharp clean fractures and few show signs of weathering.

Earlier Neolithic (Fig. 3. 1)

EN 1. A single body sherd from a shallow bowl or (?) cup. Dark brown fabric with burnished outer surface; interior dark grey. Tempered with crushed limestone. (Base of middle cave earth). *Craven Museum, Skipton.*

Later Neolithic (Fig. 3. 2–4)

LN 2. Three basal and three body sherds from a large bowl? Decoration executed with a triangular-pointed instrument, probably a stick, on the whole of the exterior surface; exterior dark brown to orange in colour; interior and core dark brown to black. Tempered with crushed limestone and small weathered limestone pebbles. (Associated with burials B10 and B11, middle cave earth).
Craven Museum, Skipton and Cartwright Hall Museum, Bradford.

LN 3. Basal sherd. Soft orange fabric with lighter orange outer surface; interior buff-brown, core dark grey-black. (Base of middle cave earth).
Craven Museum, Skipton.

LN 4. Rim of a collared vessel in a dark brown-grey fabric with a lighter rusty-grey core. The exterior surface is smooth and is decorated with bird-bone impressions in a pseudo-whipped-cord style. (Base of middle cave earth).
Craven Museum, Skipton.

Early Bronze Age (Figs. 3:5 and 6; 4:7 and 8)

EBA 5. A single sherd from a Food Vessel, in a dark purple-brown ware, with a dark black-brown to a lighter chocolate-brown core. The interior surface is buff-orange and is broken by white specks of crushed limestone. The exterior is decorated with vertical finger-nail impressions. (Above hearth, north end of main chamber, middle cave earth).
Craven Museum, Skipton.

EBA 6. Two body sherds from a Food Vessel, with inner surfaces missing. A hard fabric tempered with sandstone grit varying from 0.5 to 1.0 cm. in diameter. Outer buff-orange surface covered by a thin brown-black slip with the underlying paste showing through in places; core dark purple-brown. Decorated with vertical finger-nail impressions over the whole of the exterior surface. (Above hearth, north end of main chamber, middle cave earth).
Craven Museum, Skipton.

EBA 7. 35 sherds belonging to a Collared Urn in a buff-orange ware with darker orange-brown patches. The interior is buff-brown with darker brown patches and is carbonised towards the base. The core is black-brown and contains numerous particles of sand and crushed limestone.

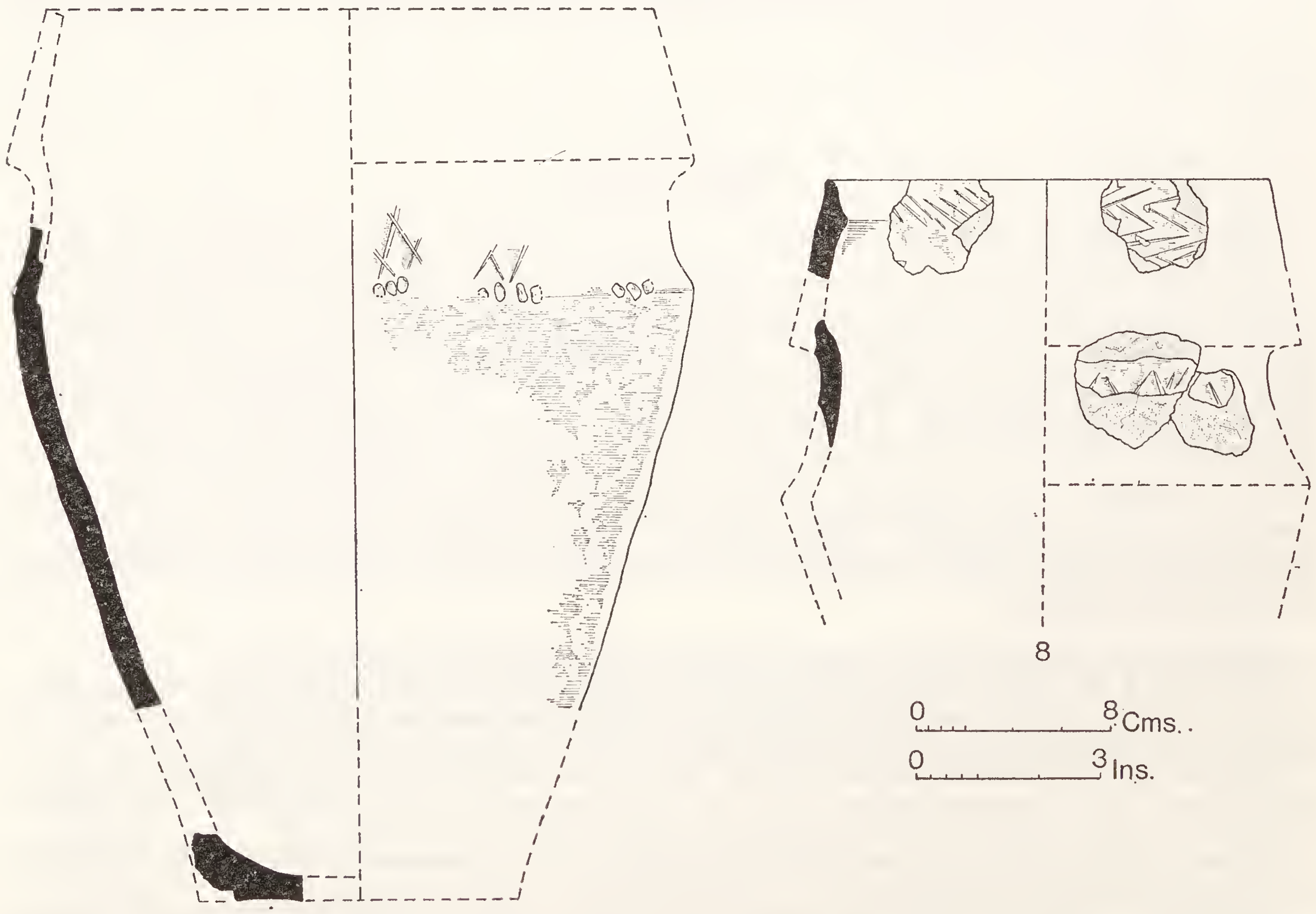

Fig. 4. Early Bronze Age Collared Urns. ($\frac{1}{4}$).

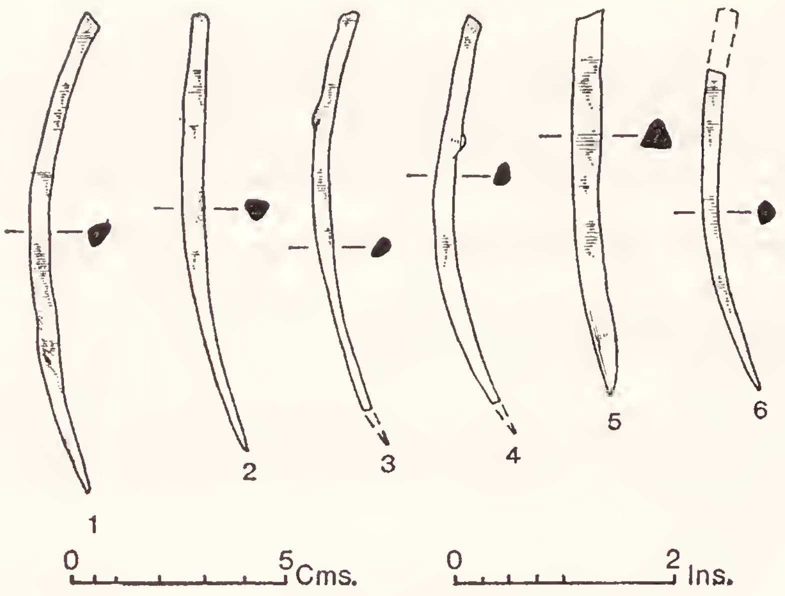

FIG. 5. Bone Pins. (⅓).

Decoration on the neck is of acute lattice striations bordered on the shoulder by finger-tip impressions. (Associated with burials B1 and B2, upper cave earth).
Craven Museum, Skipton.

EBA 8. 12 sherds belonging to a Collared Urn. The fabric is quite hard with a dark black-brown to a lighter buff-brown outer surface. The core is brown-grey to grey-black. Decoration on the collar is in the form of a herring-bone pattern executed with a sharp V-sectioned instrument, probably a flint blade or bronze knife. The neck is covered with lattice striations and is similar to EBA 8. The interior is dark brown with diagonal slashes on the bevelled rim. Tempered with fine sand and opaque water-rolled quartz grains. (Above hearth, north end of main chamber, middle cave earth).
Craven Museum, Skipton.

Bone Pins (Fig. 5)

Six unburnt bone pins manufactured from animal bones, possibly rib, or splinters of long bones which have been trimmed and smoothed. (Scattered throughout the lower, middle and upper cave earths).
Craven Museum, Skipton.

III

DISCUSSION

The limestone-tempered bowl (Fig. 3. 2) from Elbolton Cave was briefly described by Newbigin in 1937,[11] and is comparable with wares from sites in southern Scotland, like Hedderwick in East Lothian and the class III ware from Glenluce in Wigtownshire.[12] To this northerly group, which Prof. Piggott considered to be a development within the Peterborough culture, he added the five sherds from Ford in Northumberland[13] and a single sherd (identified by Longworth as part of an Enlarged Food Vessel) from Scremerston Hill in the same county.[14] If one considers the Elbolton vessel as part of this tradition one must also consider the triangular jab decorated vessels from Sewell's Cave[15] and Lesser Kelkoe Cave,[16] which in fabric and form of decoration make these vessels highly a-typical of the Later Neolithic Peterborough pottery from the north of England.

[11] Newbigin, N., 'The Neolithic Pottery of Yorkshire', *P.P.S.*, III (1937), p. 216.

[12] McInnes, I. J., 'The Neolithic and Early Bronze Age Pottery from Luce Sands, Wigtonshire', *P.S.A.S.*, XCVII (1963–4), pp. 49–54, Figs. 5–9; for further information relating to the pottery from Glenluce and Hedderwick the writer is indebted to Dr. I. H. Longworth, British Museum.

[13] Piggott, S., *The Neolithic Cultures of the British Isles* (1954), p. 310; Longworth, I. H., 'Five Sherds from Ford, Northumberland, and their Relative Date', *Y.A.J.*, XLII (1969), pp. 258–61, Fig. 1.

[14] *Piggott* (1954), p. 310; Longworth, I. H., 'A Sherd from Scremerston Hill, Northumberland', *Arch. Ael.*, XL (1962), pp. 280–1.

[15] Raistrick, A., 'Excavations at Sewell's Cave, Settle', *Proc. University Durham Philosophical Society*, IX (1936), p. 201. Fig. 5.

[16] *Newbigin* (1937), p. 216.

The fabric of the Craven vessels can be closely matched at Fox Hole Cave, Derbyshire amongst the varied Later Neolithic wares. The pottery from this site is dark brown to black in colour and is tempered with angular limestone fragments. Decoration is of shallow pits, probably produced by the articular end of a bird bone.[17] This trait is present on the Mortlake bowl from Calling Low Dale, where the impressions cover the whole of the exterior surface,[18] and on a bowl from stone hole 45 at the West Kennet long barrow.[19] Specific comparisons between certain Craven and Peak District vessels must not be made with the Later Neolithic 'Peterborough' pottery of the north but with the decorated wares of the Midlands and southern England. The single fragment of a collared bowl of Fengate type from Elbolton (Fig. 3. 4) is decorated on the collar with a pseudo herring-bone pattern produced by a bird bone. This vessel is matched at Wandsworth,[20] whilst vessels of a similar type, but with the collars decorated with incised herring-bone and triangle motifs, occur at the West Kennet long barrow.[21]

Some vessels of this series are decorated with twisted cord, a form of decoration present on a sherd from Rains Cave,[22] vessesls 1–4 at Ford[23] and a single sherd from Barrow 211, Acklam Wold, East Yorkshire.[24] The latter vessel is straight sided and is decorated below the rim with concentric semi-circles of twisted cord, bordered by a single circumferential twisted cord line, a motif found on vessels 3 and 4 at Ford[25] and on a vessel from Glenluce.[26]

Bowls with rims decorated with incised herring-bone and twisted cord are very close to some of the Food Vessels of Yorkshire Vase type. Long lines of twisted cord are found on Food Vessels from Barrow 205, Acklam Wold, Barrow 28, Life Hill, Barrow 54 and 274, Garton Slack, East Yorkshire,[27] whilst the trait is completely absent from the Peak District Food Vessels. Incised decoration is found on Peak District Food Vessels from Broadlowash, Bitchinghill, Mare Hill and Cross Low,[28] and on East Yorkshire Food Vessels from Barrow 1, High Towthorpe, Barrow 47, Wharram Percy, Barrow 9, Hanging Grimston and Barrow 14, Calais Wold.[29] In the West Riding two Food Vessels with incised decoration are recorded; one from a flat cemetery at Pule Hill, Marsden,[30] and the second from a round barrow excavated by Greenwell at Ferry Fryston.[31] In terms of chronology the vessels would belong to the Early to Early Middle Bronze Age. The only C_{14} date available for Food Vessels was obtained for two vessels from a cairn on Harland Edge, Derbyshire with a C_{14} date of (BM–178) 1490 ± 150 B.C.;[32] this date suggests that the Food Vessels are broadly contemporary with the Wessex II Bronze Age of southern England (1550–1500 – 1400 B.C.).

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[17] Jackson, J. W., and Piggott, S., 'Peterborough (Neolithic B) Pottery from High Wheeldon Cave, Earl Sterndale, near Buxton', *D.A.J.*, XXIV (1951), p. 74, Plate A2.

[18] Piggott, S., 'Secondary Neolithic Burials at Church Dale, near Monyash, Derbyshire', *P.P.S.*, XIX (1951), pp. 229–301, Fig. 2.

[19] Piggott, S., *The West Kennet Long Barrow: Excavations 1955–6* (1962), p. 36, Fig. 11 : 9.

[20] London Museum Collection.

[21] *Piggott* (1962), pp. 38, 40. Fig. 12 : 12–14.

[22] Ward, J., 'On Rains Cave, Longcliffe, Derbyshire', *D.A.J.*, XI (1889), Plate 11 : 2.

[23] *Longworth* (1969), Fig. 1.

[24] Manby, T. G., 'A Neolithic Site at Driffield, East Riding of Yorkshire', *Y.A.J.*, XXXIX (1957), Fig. 5 : 1.

[25] Longworth (1969), Fig. 1 : 3 and 4.

[26] Callander, J. G., 'A Short Cist Containing a Beaker at Newlands, Oyne, Aberdeenshire, and Sundry Archaeological Notes', *P.S.A.S.*, LXVII (1932–3), p. 238, Fig. 8 : 1.

[27] Mortimer, J. R., *Forty Years Researches* (1905), Figs. 201, 499, 163 and 735.

[28] Manby, T. G., 'Food Vessels of the Peak District', *D.A.J.*, LXXVII (1957a), Figs. 4 : A40; 5 : A31, B2 and B6.

[29] *Mortimer* (1905), Figs. 3, 72, 256 and 405.

[30] Manby, T. G., 'Bronze Age Pottery from Pule Hill, Marsden, W.R. Yorkshire and Footed Vessels of the Early Bronze Age from England', *Y.A.J.*, XLII (1969), p. 274, Fig. 1 : 2.

[31] Pacitto, A. L. and Longworth, I. H., 'The Excavation of two Bronze Age Burial Mounds at Ferry Fryston in the West Riding of Yorkshire', *Y.A.J.*, XLII (1969), Fig. 6 : 2.

[32] Riley, D. N., 'An Early Bronze Age Cairn on Harland Edge, Beeley Moor', *D.A.J.*, LXXXVI (1966), p. 44.

The vertical finger-nail decoration present on the two Food Vessels from Elbolton is hard to parallel on others from the north of England. The motif occurs as a series of scattered vertical impressions on a Food Vessel from Barrow 12, Hanging Grimston, on the Wolds,[33] and with horizontal cord-impressed lines on the rim of a Food Vessel from Stanton Moor T.21, Derbyshire.[34] The trait occurs frequently as pairs and scattered impressions on the Beaker pottery and Food Vessel fragments from Barrow 4, Swarkeston[35] and on the Later Neolithic/Early Bronze Age pottery found associated with inhumation burials and a cist burial at Fox Hole Cave (Fig. 6. Appendix II, Table);[36] the pottery from the latter two sites does, however, possess the closest affinities i.e. fabric, tempering medium and mode of decoration[37] to the Elbolton Food Vessels.

As Food Vessels, Overhanging Rim Urns, Collared Urns and Pygmy Cups etc., are no longer considered as representing distinct chronological phases from the Early to Middle Bronze Ages, but as being broadly contemporary in date, it should be possible to make closer comparisons between the Food Vessels cited and other forms of Later Neolithic and Early Bronze Age pottery which possess this trait. Indeed, Longworth demonstrated that certain traits, e.g. whipped and twisted cord, linear incision and grooved decoration found on the Primary Series of Collared Urns, had their ancestry in the Later Neolithic ceramic traditions of the Peterborough Culture.[38]

Finger-nail decoration, either as pinched pairs or as vertical or scattered impressions, is found on the Later Neolithic and Early Bronze Age pottery from the north of England. That from Fox Hole has already been mentioned. To this series we may add the small outbent rim sherds from the open occupation site at Normanby Park[39] and a Beaker sherd from Risby Warren,[40] both in north Lincolnshire. A complete Beaker decorated with pairs and scattered impressions accompanied the skeleton of a child at Barrow 4, Painsthorpe Wold[41] and a Cinerary Urn from Barrow 24, Calais Wold is decorated on the neck with vertical lines of finger-nail impressions.[42] Associated with ox bones at Barrow C.43, Garrowby Wold, were fragments of Beakers, Food Vessels, and a large sherd, decorated with vertical lines of finger-nail impressions, belonging to a straight-sided Pygmy Cup;[43] again at Risby Warren a single sherd belonging to the collar and part of the neck of an Overhanging Rim Urn is decorated with three horizontal lines of vertical finger-nail impressions.[44]

That the trait has deep roots in the Peterborough Culture is shown by the examples cited from Fox Hole Cave, Swarkeston and Elbolton,[45] and that in the Early Bronze Age, finger-nail decoration was used more liberally, on Beakers, Food Vessels and Collared Urns etc, than it was in the Later Neolithic on dishes and bowls, although unlike whipped and twisted cord ornamentation, it is present on so few vessels.

The finger-nail decorated Food Vessels from Elbolton were linked stratigraphically above a hearth in the lower middle cave earth with sherds of a Collared Urn (Fig. 4. 8) of Longworth's Secondary Urn Series.[46] The current dating of Food Vessels and Collared Urns etc., is based on the dates suggested by the Bristlecone Pine calibration

[33] *Mortimer* (1905), p. 106, Fig. 250.

[34] *Manby* (1957a), p. 23, Fig. 6 : A36.

[35] Greenfield, E., 'The Excavation of Barrow 4, Swarkeston, Derbyshire', *D.A.J.*, LXXX (1960) pp. 36–9, Fig. 10.

[36] Piggott in *Jackson* (1951), pp. 74, 76, Plate A : 3 and Plate B : 6–8.

[37] *Greenfield* (1960), pp. 26–8.

[38] Longworth, I. H., 'The Origins and Development of the Primary Series in the Collared Urn Tradition in England and Wales', *P.P.S.*, XXVII (1961), pp. 264–73.

[39] Riley, D. N., 'Neolithic and Bronze Age Pottery from Risby Warren and Other Occupation Sites in North Lincolnshire', *P.P.S.*, XXIII (1957), p. 46, Fig. 3 : 10 and 11.

[40] *Ibid.*, Fig. 8 : 7.

[41] *Mortimer* (1905), p. 117, Fig. 282.

[42] *Ibid.*, p. 156, Fig. 401.

[43] *Ibid.*, p. 148, Fig. 395.

[44] *Riley* (1957), p. 56, Fig. 9 : 11.

[45] *Jones* (1892), p. 105.

[46] Longworth in *Pacitto* (1969), p. 303.

for the Unetice/Wessex Culture/Irish:British Early Bronze Age of *c.* 2100–1700 B.C. instead of the old short British Early Bronze Age of 1600–1400 B.C. This means starting our Middle Bronze Age at 1700 instead of 1400, so that it has to be stretched to cover the extra three centuries. This makes it necessary to apply a correction of the C_{14} date of 1490±150 B.C. for the Harland Edge Food Vessels to *c.* 1700+B.C. Nevertheless, these Food Vessels still appear to be late in the new Early Bronze Age.[47] It is not intended, however, to recalibrate the remaining single C_{14} dates used in this paper, owing to the presence of several 'wiggles' in the Suess curve over the periods under discussion.

Elbolton Collared Urn No. 8 is decorated on the collar with an incised herring-bone pattern with acute lattice striations below on the neck (Fig. 4. 8); several small fragments of pottery are decorated with oval stick impressions and these are probably from the shoulder. The urn is interpreted as domestic rather than funerary, due to the absence of burials and its association with a hearth, Food Vessel fragments and animal bones. A second Collared Urn (Fig. 4. 7) is also decorated on the neck with acute lattice striations, bordered on the shoulder by a necklace pattern of shallow oval stick impressions. Sherds of this urn were found associated with an un-urned cremation and two disturbed burials (Fig. 2. Burials B1 and B2) in the upper cave earth.[48]

The lattice striations and the necklace ornament can be paralleled on two 'Pennine' Urns from Warley, Halifax[49] belonging to Longworth's Secondary Urn Series; both were associated with a contracted mouth type of accessory vessel distinguished by Longworth and dated by him to either side of 1400 B.C.[50] A 'Pennine' Urn identical to Urn No. 1 from Warley[51] was found inverted over a cremation at Harland Edge. Riley presumed that the burial was secondary, although no evidence that this was so was obtained from the cairn, which was much disturbed in the area of the burial. The urn is decorated on the collar with filled triangles of cord impressions bordered below the rim and along the base of the collar with two pairs of cord-impressed lines; below, the neck is covered with incised lozenges, bordered on the shoulder by a single and partial double row of stick impressions.[52] The incised herring-bone pattern found on the collars of the Elbolton Collared Urns occurs on the collar of a complete urn of the Secondary Series from Barrow C.29, Aldro[53] and on the neck of a Collared Urn from Barrow C.49, Riggs Group.[54] A small sherd from the collar of a Collared Urn was also found above Late Neolithic burials at Fox Hole Cave,[55] which is decorated in a similar manner to Elbolton No. 8.

The sequence and dating of the cist and inhumation burials at Elbolton Cave is problematical. Burials B10 and B11 were associated with pottery similar to that described by Longworth from Ford which he dated to the seventeenth/sixteenth centuries B.C.,[56] on evidence obtained from Brackmont Mill where a sherd decorated with finger-pinched rustication of the type associated with domestic Beakers was found in association with pottery similar to that from Ford.[57] If the Collared Urn and Food Vessels found associated with the hearth, to the north and above the cist burials, are broadly contemporary with the lattice-decorated Collared Urns from Warley and Harland Edge, a date close to the beginning of the fifteenth century B.C. would seem

[47] Burgess, C. B., 'The Bronze Age', *Current Archaeology,* No. 19 (1970), pp. 208–9, also 'The Radiocarbon Revolution', *Ibid.,* No. 18 (1970), pp. 180–4.

[48] *Jones* (1889), pp. 87–8.

[49] Gilks, J. A., 'Two Middle Bronze Age Cinerary Urns from Tower Hill, Warley, W.R.', *Y.A.J.,* XLII (1968), pp. 119–20, Figs. 1 and 2.

[50] Longworth, I. H., 'Contracted Mouth Accessory Cups', *British Museum Quart.,* XXI (1967), pp. 111–22.

[51] *Gilks* (1968), pp. 119–20, Fig. 1.

[52] *Riley* (1966), pp. 41–2, Fig. 10 : 1.

[53] *Mortimer* (1905), p. 71, Fig. 148.

[54] *Ibid.,* pp. 172–3, Fig. 433.

[55] Information kindly supplied by the excavator, D. Bramwell, Bakewell.

[56] *Longworth* (1969), pp. 260–1.

[57] Longworth, I. H., Candow, R. D. M., Crerar, R., and Henderson, D., 'Further Discoveries at Brackmont Mill, Brackmont Farm and Tentsmuir, Fife', *P.S.A.S.,* XCIX (1966–7), p. 68, Fig. 4 : No. 3.

appropriate for the occupation. Collared Urn No. 7, found associated with Burials B1 and B2 and a cremation in the upper cave earth were separated from Urn No. 8 by four ft. of brown clay and limestone rubble; this deposit must have been formed over a considerable period, and it is therefore unlikely, that Urn No. 7 is earlier than the end of the fifteenth century B.C.

Conclusions

The duration of burial and occupation at Elbolton Cave covers the period from the seventeenth to the fifteenth centuries B.C. The lowest burials, B10 and B11, are tentatively dated to the seventeenth/sixteenth centuries B.C., and the hearth, Collared Urn No. 8 and the Food Vessels to the beginning of the fifteenth century. Between these two horizons were three cist burials; in the absence of data these can only be dated to within the time bracket suggested for Burials B10 and B11 and the hearth. In the upper cave earth Burials B1, B2 and a cremation were associated with Collared Urn No. 7, which probably belongs to the end of the fifteenth century B.C. Between Burials B1, B2 and B10, B11 were numerous human and animal bones; many of these had been disturbed and some broken bones from the same animal were found scattered throughout the upper and middle cave earths. Occupation appears to have been prolonged, and the evidence recovered is comparable with that obtained from other Later Neolithic and Early Bronze Age cave burial/occupation sites in West Yorkshire, Derbyshire and north Staffordshire (see Appendix I).

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APPENDIX 1

Distribution of Earlier Neolithic, Later Neolithic and Early Bronze Age Cave Burial Sites in the North of England.

DERBYSHIRE

Map No.

Fig. 6. 1. Ash Tree Cave, Whitwell.
Nat. Grid. Ref.: SK 376515.
Collection: Manchester Museum.
Publication: Armstrong, A. L., *D.A.J.*, LXXVI (1956), pp. 57–64.
Description: Collective inhumation burials below limestone debris at the entrance to the cave. Cist constructed of limestone boulders 20 ft. from the entrance, and containing the disarticulated bones of at least two individuals.

2. Calling Low Dale (formerly Church Dale).
Nat. Grid. Ref.: SK 183654.
Collection: Sheffield City Museum.
Publication: Harris, T. A., *P.P.S.*, IV (1938), p. 317; Piggott, S., *P.P.S.*, XIX (1953), pp. 228–30, Figs. 1 and 2.
Description: Three articulated skeletons, one in cist A. Cist B contained the disarticulated bones of least four individuals; associated with these was a Peterborough Ware bowl with bird-bone and stick impressions and a *petit tranchet* arrowhead, class E.
To the north west of cist B, five articulated skeletons of young children, no associated finds.

3. Dowel Cave, Earl Sterndale.
Nat. Grid. Ref.: SK 075676.
Collection: Peakland Archaeological Society.
Publication: Bramwell, D., *P.A.S. Newsletter*, No. 15 (1960), pp. 8–11; Bramwell, D., *D.A.J.*, LXXIX (1959), pp. 97–107.

Description: Ten inhumation burials recorded, possibly belonging to the Later Neolithic period. Skeletons were either extended, crouched or disarticulated. A bone pin and several scraps of unworked flint were the only small finds.

4. Fox Hole Cave, High Wheeldon.
Nat. Grid. Ref.: SK 100663.
Collection: Bramwell, D., Bakewell.

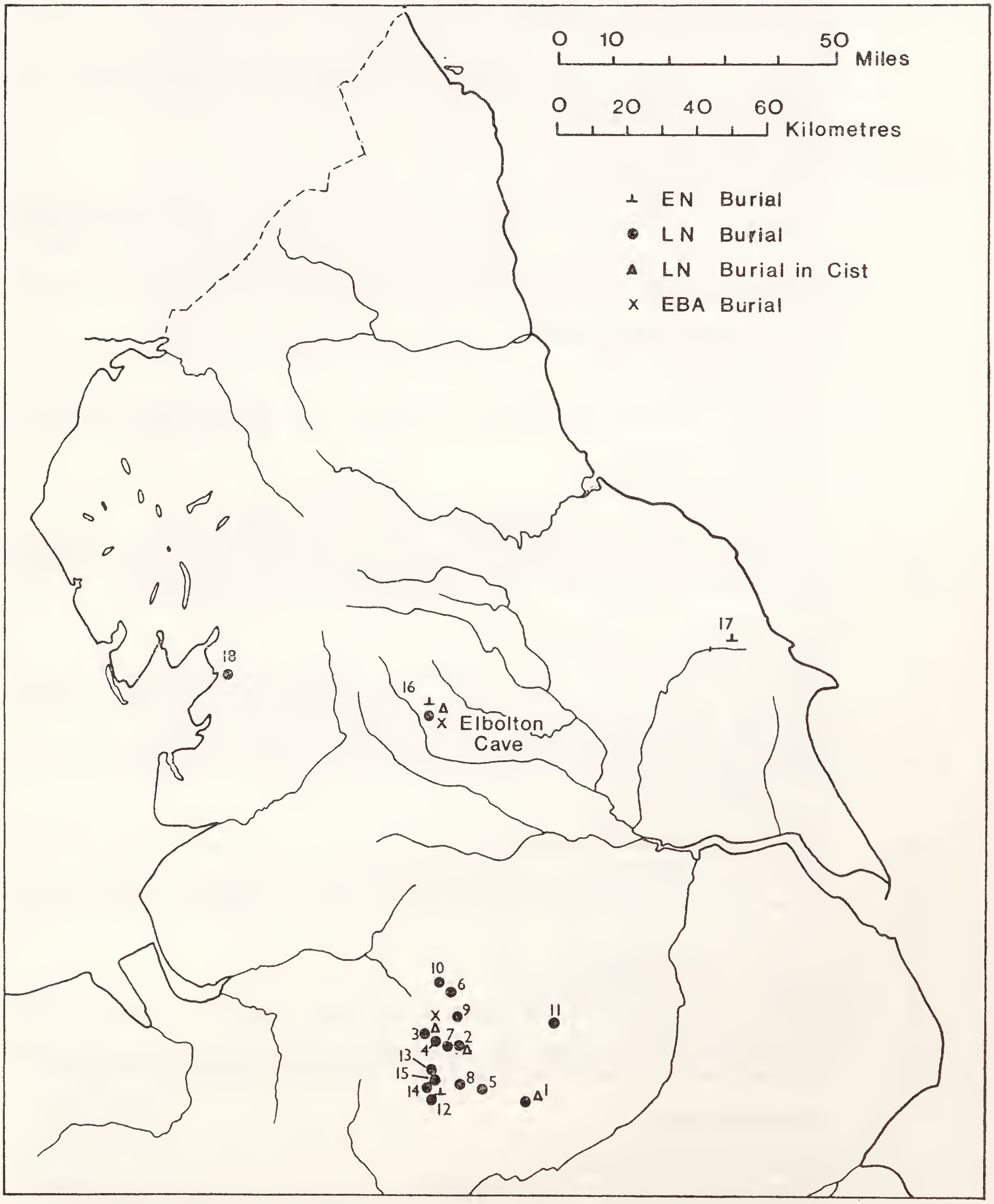

FIG. 6. Distribution of Earlier Neolithic, Later Neolithic and Early Bronze Age Cave Burial Sites in the North of England.

Publication: Jackson, J. W. and Piggott, S., *D.A.J.*, XXIV (1951), pp. 72–77, Plates A and B; Bramwell, D., *P.A.S. Newsletter*, Nos. 15–25 (1960–70).
Description: Cist constructed of limestone boulders at the entrance to the cave. Neolithic/Early Bronze Age burials associated with Later Neolithic pottery and Beaker sherds. Fragments of two round-based bowls with finger-nail rustication and stick impressions associated with human bones in the main passage.

5. Harborough Cave, Brassington.
Nat. Grid. Ref.: SK 242552.
Collection: Bramwell, D., Bakewell.
Publication: Storrs Fox, W., *D.A.J.*, XXXI (1909), p. 5; Armstrong, A. L., *J.R.A.I.*, XXII (1923), p. 405, Fig. 10 : 4. Plate XXII (3) g.
Description: Vertebra, teeth, phalanges and fragment of skull from layer 3. Fragments of 'Peterborough' pottery with heavy pseudo-cord impressions. Also an everted rim with hollow neck.

6. Hartle Dave Caves.
Nat. Grid. Ref.: SK 165803.
Collection: British Museum.
Publication: Pennington, R., *Quart. J. Geol. Soc.* (1875); Pennington, R., *Notes on the Barrows and Bone Caves of Derbyshire* (1887), p. 57; Pill, A. L., *Proc. Spelaeological Ass.*, No. 1 (1963); Pill, A. L., *Cave Science*, V, No. 33 (1963), pp. 25-33, Fig. 2; Jackson, J. W. in Glennie, E. A., *British Caving* (1962), p. 270.
Description: Fragments of human bones associated with bones of goat, pig, fox and rabbit. Thick heavy rim belonging to a bowl of Peterborough Ware type.

7. One Ash Cave, Lathkill Dale.
Nat. Grid. Ref.: SK 173657.
Collection: Harris, T. A.
Publication: None.
Description: Human bones from layer 2, associated with disc knife and leaf shaped arrowhead.

8. Rains Cave, Longcliffe.
Nat. Grid. Ref.: SK 226553.
Collection: Lost.
Publidation: Ward, J., *D.A.J.* (1889), pp. 31–45, Plate II: 3 and 4.
Description: Three human skulls recorded. Round-based shell-gritted bowl with slight shoulder and hollow neck, decorated with diagonal slashings on the rim bevel. Animal bones representing sheep, goat, horse, red deer, roe deer, dog, badger, wild cat and rabbit.

9. Ravenscliffe Cave, Cressbrook Dale.
Nat. Grid. Ref.: SK 174735.
Collection: British Museum; Buxton Museum.
Publication: Storrs Fox, W. and Read, C. H., 'Ravenscliffe Cave', *D.A.J.*, XXXII (1910), pp. 141–51; Smith, R., 'Ravenscliffe Cave', *D.A.J.*, XXXIV (1912), pp. 55–6; Storrs Fox, W., 'Ravenscliffe Cave', *D.A.J.*, I (1930), pp. 71–8.
Description: In area G, seven mandibles and fragments of 13 others. Polished stone axe and flints, possibly waste flakes, from passage O.

10. Treak Cliff, Castleton.
Nat. Grid. Ref.: SK 136832.
Collection: Manchester Museum.
Publication: Armstrong, A. L., *J.R.A.I.*, LII (1923), pp. 123–31.
Description: Later Neolithic burial, male 15–17 years of age. Ceph. index 83. 3. Fragments of a second skull, femurs and tibia. Re-chipped greenstone axe and red deer antler pick.

11. Whaley Rock Shelter No. 2.
Nat. Grid. Ref.: SK 511721.
Collection: Manchester Museum.
Publication: Anon., *D.A.J.*, LIX (1938), p. 81; Radley, J., *D.A.J.*, LXXXVII (1967), pp. 3–7, Figs. 4 and 5.
Description: Skull, vertebra, phalanges and teeth from 'Parlour' area. Peterborough pottery with finger-nail, cord maggot and dot and slash decoration. Unpolished greenstone axe.

STAFFORDSHIRE

12. Cheshire Wood Cave.
Nat. Grid. Ref.: SK 116536.
Collection: Hanley Museum, Stoke-on-Trent.
Publication: Emery, G. T., *N. Staffs. J.F.S.*, Vol. 2 (1962), pp. 33–5, Figs. 1B and 1C.
Description: Fragments of jaw and teeth representing two adults, 25 to 35 years of age at death, and two children between 3 and 5 years of age. A Y-shaped deer tine with split shaft,

a chert flake and some sherds of Earlier Neolithic pottery of Grimston-Ware type from layer 4. Animal bones representing badger, sheep, wild cat, dog and deer.

13. Darfur Ridge Cave, Manifold Valley.
Nat. Grid. Ref.: SK 097558.
Collection: Thomas and Moore.
Publication: Thomas, F. H. and Moore, R., *P.A.S. Newsletter,* No. 18 (1962), pp. 7–9; Nicholson, S., *P.A.S. Newsletter,* No. 21 (1966), pp. 20–4.
Description: Fragments of skull, vertebra, tibia, fibula, humerus and teeth scattered throughout layer II (lower). Leaf-shaped arrowhead with unifacial working.

14. Falcon Low Cave, Hamps Dale.
Nat. Grid. Ref.: SK 105532.
Collection: Hanley Museum, Stoke-on-Trent.
Publication: Emery, G. T., *N. Staffs. J.F.S.,* Vol. 2 (1962), p. 33, Fig. 1A.
Description: Six individuals represented, two adults and four children. Emery identified skull fragments and teeth as belonging to two adults 25 to 35 years of age, one child 12 to 18 months, two 3 to 4 years and one 6 to 7 years of age at death. Two flint chippings and animal bones of dog, hare, wild cat, marten, pig and sheep were found associated with the burials.

15. Sevenways Cave, Manifold Valley.
Nat. Grid. Ref.: SK 098548.
Collection: Bramwell, D., Bakewell.
Publication: Bramwell, D., *P.A.S. Newsletter,* No. 8 (1952), pp. 4–5; No. 10 (1954), pp. 8–10.
Description: Disarticulated skeletons accompanied by 'Peterborough' pottery, a flint leaf-shaped arrowhead and a bone awl.

YORKSHIRE

16. Elbolton Cave.
Present report.

17. King Alfred's Cave, Ebberston.
Nat. Grid. Ref.: SE 898835.
Collection: Pottery, Batley Museum; Human skeletal material, Doncaster Museum.
Publication: None.
Description: Disarticulated burials in light brown clay resting on floor of cave. Earlier Neolithic pottery, possibly Grimston-Ware, associated with burials; also several sherds of Early Bronze Age pottery.

LANCASHIRE

18. Dog Hole Cave, Warton.
Nat. Grid. Ref.: SD 488729.
Collection: Lancaster Museum.
Publication: Jackson, J. W., *T. Lancs. & Ches. Ant. S.,* XXVII (1909), pp. 1–32.
Description: Human bones from a fissure cave associated with Later Neolithic pottery tempered with crushed chert; also a beaker sherd, a chert scraper and a waste flake. Later R–B occupation with pottery, iron, bronze and bone objects.

APPENDIX II

DERBYSHIRE	Earlier Neolithic	Later Neolithic	Early Bronze Age	Single inhumation burial	Collective inhumation burials	Single inhumation burial in cist	Collective inhumation burials in cists	Child burial	Blocking	Associated material (Grave goods)	Contemporary occupation
Ash Tree Cave ..		X			X		X				
Calling Low Dale		X		X		X	X	X		X	
Dowel Cave ..		X			X			X	X	X	

APPENDIX II *(cont.)*

Fox Hole Cave . .		X	X				X			X	
Harborough Cave		X			X					X	
Hartle Dale Caves		X			X					X	
One Ash Cave . .		?			X					X	X
Rains Cave . .	?				X					X	X
Ravenscliffe Cave		?			X					X	
Treak Cliff . .		?			X					X	
Whaley Site 2 . .		X		X						X	X
STAFFORDSHIRE											
Cheshire Wood Cave . .	X				X			X		X	X
Darfur Ridge Cave . .		X			X			X		X	X
Falcon Low Cave		?			X					X	
Sevenways Cave		X			X					X	
YORKSHIRE											
Elbolton Cave . .	X	X	X	X	X	X				X	X
King Alfred' Cave . .		X		X						X	
LANCASHIRE											
Dog Hole Cave		X	X							X	

TWO BRONZE AGE BARROWS IN THE NORTH RIDING OF YORKSHIRE

By T. C. M. Brewster

EXCAVATIONS AT IRTON MOOR BARROW I
AND
WYKEHAM FOREST BARROW

IRTON MOOR I

ABSTRACT

The barrow was excavated in advance of land reclamation and was found to be of two periods. In the first, a central grave was dug, in which was placed a coffin containing the cremated remains of two males, perhaps related. Tanged and barbed arrowheads accompanied the cremations. The grave was sealed by large stone blocks and a mound of stacked turves covered by material scraped from the surrounding ground. In the second period a kerb was built outside the primary mound, and sealed by a secondary barrow associated with a robbed cremation pit.

I

INTRODUCTION

The Site before Excavation

Irton Moor Barrow I was one of a series of barrows on Beacon Farm, Irton Moor, near Scarborough (Fig. 1). The barrow lies (at SE 998868) N.E. of Baron Albert's Tower. The excavation was undertaken in May 1971 at the request of the owners due to the hindrance to agriculture of this and nearby barrows.[1]

Evidence of modern occupation and injury to the barrow was most marked. The site had been robbed in the early part of this century and an urned or unurned human cremation removed east of the central grave (Fig. 6). Undatable digging, apparently for rabbits, had taken place just south west of the central grave. Many spent and dummy .303 calibre rounds of ammunition were associated with 'glass alley' bottles which went out of use in the early 1920's in the area. These could be connected with the military use of the moor during the 1914–18 war.[2] The digging of the crescent-shaped trench containing cartridges on the north side of the barrow must be attributed to this phase. This trench is clearly defined in Fig. 6. The mound was damaged about 1966-67 when a heavy plough was used in an attempt to cultivate the moor, damaging the kerb; afterwards the barrow reverted to grass. Ploughing had taken place from south west to north east across the site, doing less damage on the northern side.

Site location and topography

The barrow was located close to the eastern end of the Jurassic sandstone and limestone moorlands. The land falls steeply away to the east of the barrow to the coastal lowlands covered by the town of Scarborough. Southwards from the site is the Vale of Pickering

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[1] The excavation's success was due entirely to two volunteers, Mr. G. Wilson and Mr. L. Allerston and the staff, Mr. P. Armstrong, Miss V. Knight, Mrs. J. Dawes and Mr. R. G. Storey who worked day and night in the last days of the excavation, which was undertaken by the East Riding Archaeological Research Committee for the Department of the Environment.

[2] The writer found numerous cartridges and a few coins dated prior to 1920 in the same area as the barrow in 1937 after the grass and heather had been burnt off in a moorland fire.

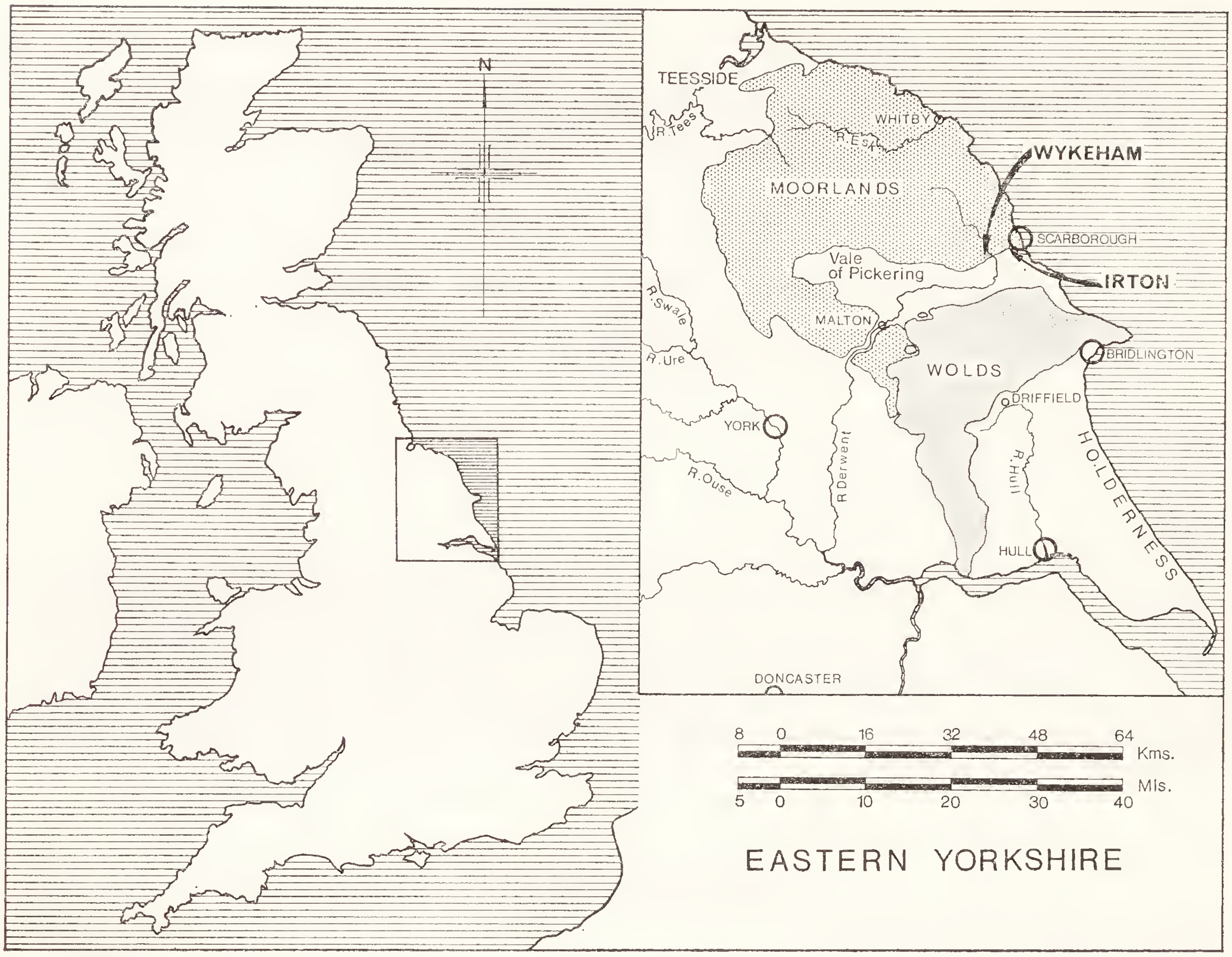

Fig. 1. Location of Sites

and to the north the higher moorlands. 150 yards south west of the barrow lies Beacon Hill (Fig. 2), a morainic mound covered by coniferous trees, three barrows and the remains of Baron Albert's Tower built on top of the central barrow. This hill was formerly known as Seamer Beacon.[3] Immediately westwards from the barrow is Hagworm Hill, a natural hill capped by a damaged cairn and Irton Moor II barrow, excavated late in 1971. The barrow field and those surrounding it were rough moorland until about 1966 when the land was first ploughed. The soil consists of grey sandy loam and areas of peat and sand overlying yellow sandy subsoil and clay, which rests on the sandstone fresh-water deposits. Beneath the barrow there was no evidence of pan formations, although these must have formed in hollows surrounding the mound, which still hold pools and bogs. A small bog occurs 80 ft. from the north-west corner of the barrow and contains stagnant pools, reeds and sphagnum moss.

THE BARROW

Although previously ploughed and damaged as noted above, the barrow survived as a nearly circular mound just under 80 ft. in diameter, 4 ft. 6 in. high (Fig. 3). Immediately east of the centre the top was fairly flat due to the circular pit dug from the surface and containing disturbed calcined human bone at the bottom. This was evidence of a disturbed secondary cremation; it was unlikely to have been caused by rabbit or military disturbance. There are local accounts of an excavation of this or a nearby barrow in the early 1900's, but nothing in writing. Natural erosion does not appear to have caused the mound to spread significantly (Fig. 6).

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[3] The site of a murder during a religious uprising in the late sixteenth century.

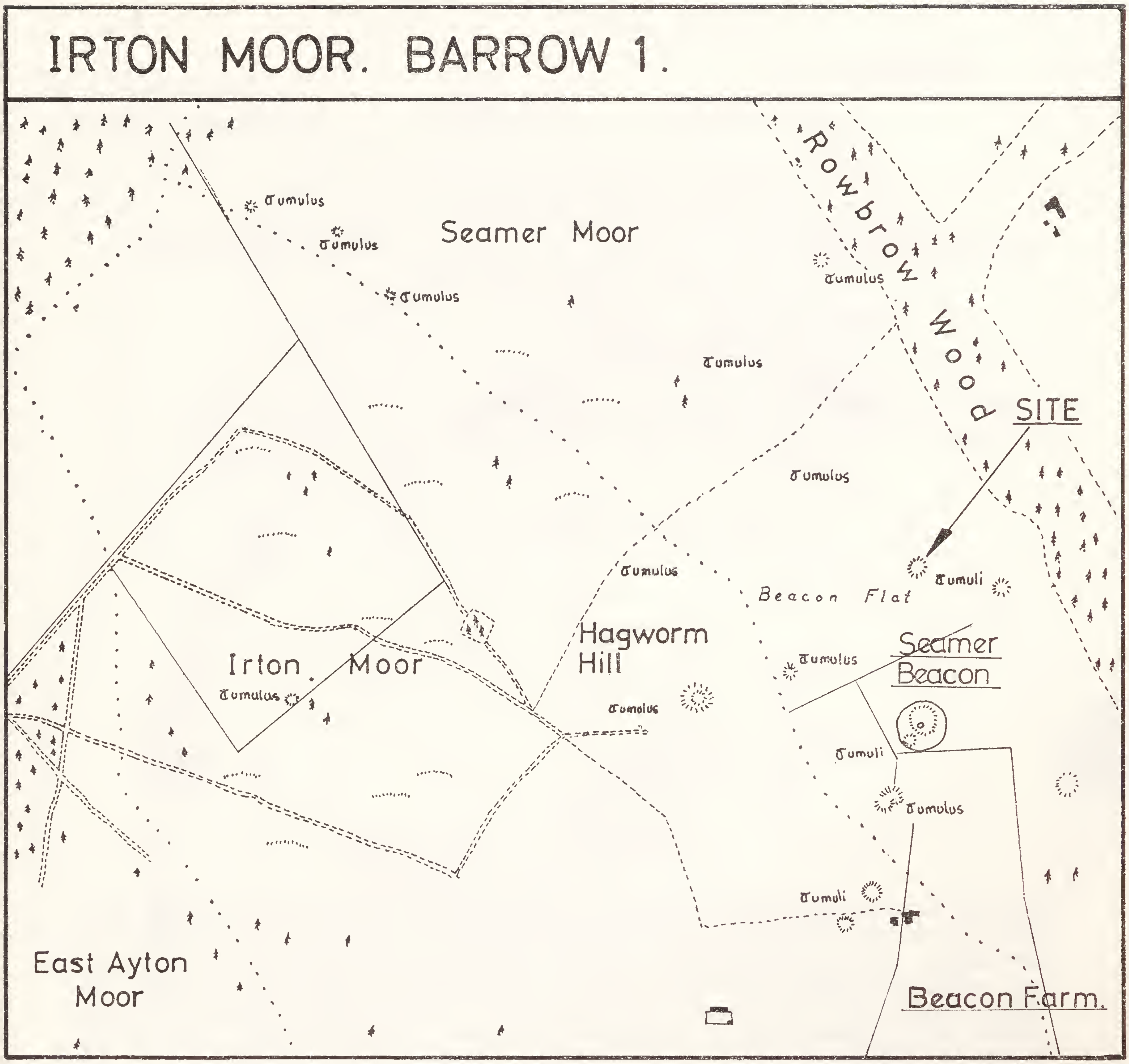

Fig. 2. Map of Irton Moor

II

THE EXCAVATION[4]

Pre-Barrow Turf Lines

Running beneath the primary and part of the secondary barrow was a clearly-defined prehistoric turf line, black to grey at the top fading out into the yellow subsoil beneath (Fig. 6; Plate 8). It was noticed that some of this soil had slipped down part of the upper

[4] The 80 ft. grid enclosing the barrow and including the cross baulk pegs was laid out and levelled. The mound was excavated by quadrants with two central cross-baulks running approximately east to west and north to south. The outer covering of the mound was stripped to expose the upper surfaces and shovel pared to expose secondary pits and disturbances. The body of the mound was pared away to the natural, leaving structures such as the grave kerb and pits, on square or rectangular plinths. The baulk sections were then trowel trimmed. The cairn and limestone grave plugs were lifted by a crane, using steel

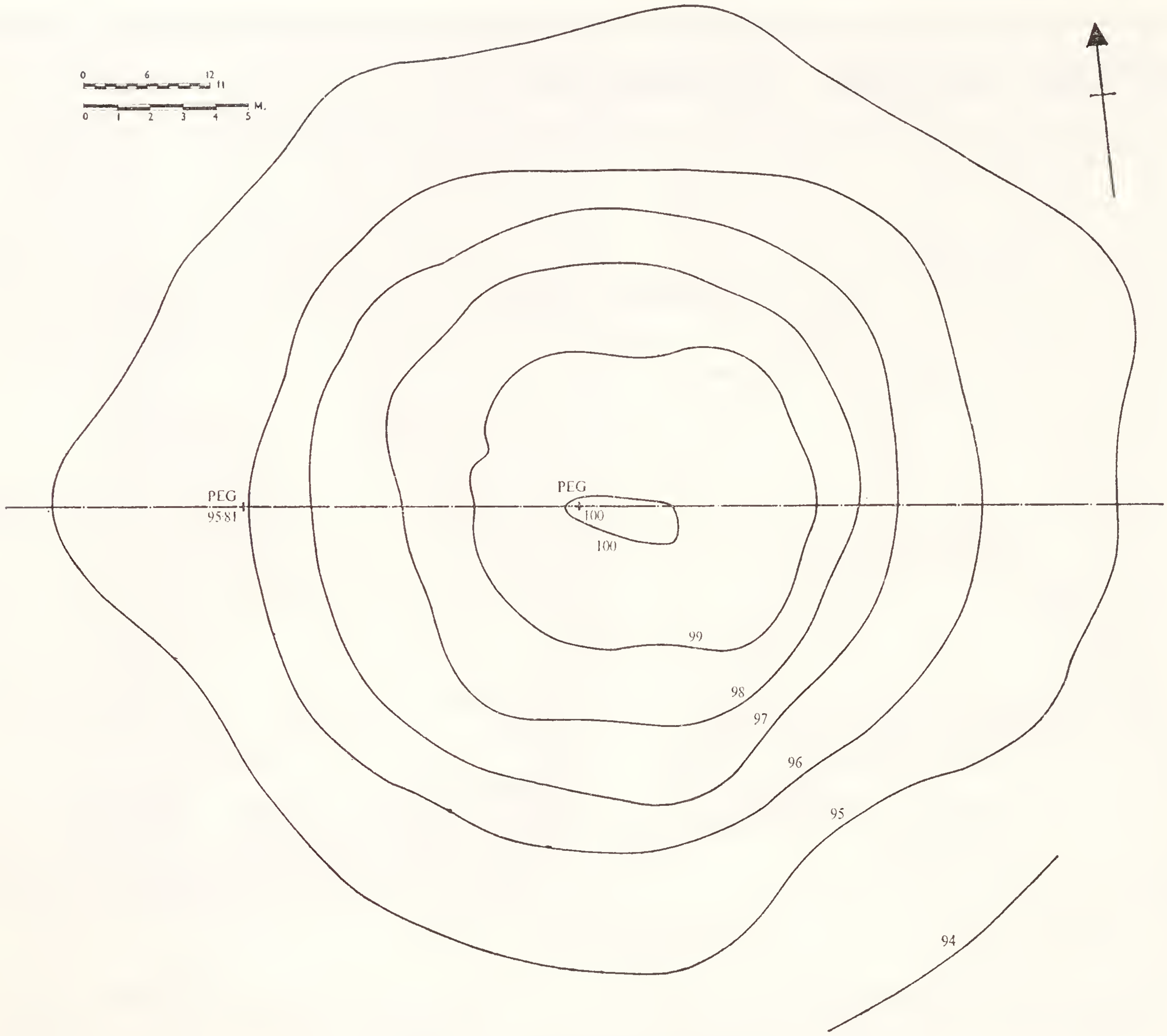

Fig. 3. Contour Plan of Barrow

slope of the grave sides, due to subsidence caused by the cairn blocks. Unlike the East Riding Wold turf zones beneath barrows, which are 18 in. to 2 ft. above the surrounding landsurface, the Irton Moor, Hutton Burcel[5] and Sawdon Moor[6] moorland turf lines are usually only slightly above the modern surface. This is partly due to the land not being ploughed until recent times, but chiefly caused by the less rapid chemical and frost erosion of the Jurassic rock, in contrast to the softer more easily eroded chalk of the Cretaceous system.

The Primary Mound (Figs. 4, 5 and 6)

Cairn and Grave Plugs

The stones associated with the cairn consisted of local sandstone with the exception of a light green sandstone block perhaps of morainic origin. Each stone had been care-

rungs screwed in the stones, enabling them to be removed vertically without damage to the grave and its contents. Plates 5 and 3.

A canopy was placed over the grave and the excavation undertaken from a wooden platform. When the level was lowered a steel frame cradle was suspended over the coffin and the excavator worked on its lower platform under the canopy as work proceeded. Samples of the soil were taken from the north-south cross baulk at one-inch intervals through the mound, from the lower natural to the modern surface, for pollen sampling.

All plans were drawn 1 : 24 and sections 1 : 12. Aerial surveying and site photography was taken on 3½ × 2¼ format for the monochrome and 35 mm for colour photographs. A 6Kw generator supplied power for night work.

[5] M.P.B.W. Excavations Annual Report 1965

[6] M.P.B.W. Excavations Annual Report 1966.

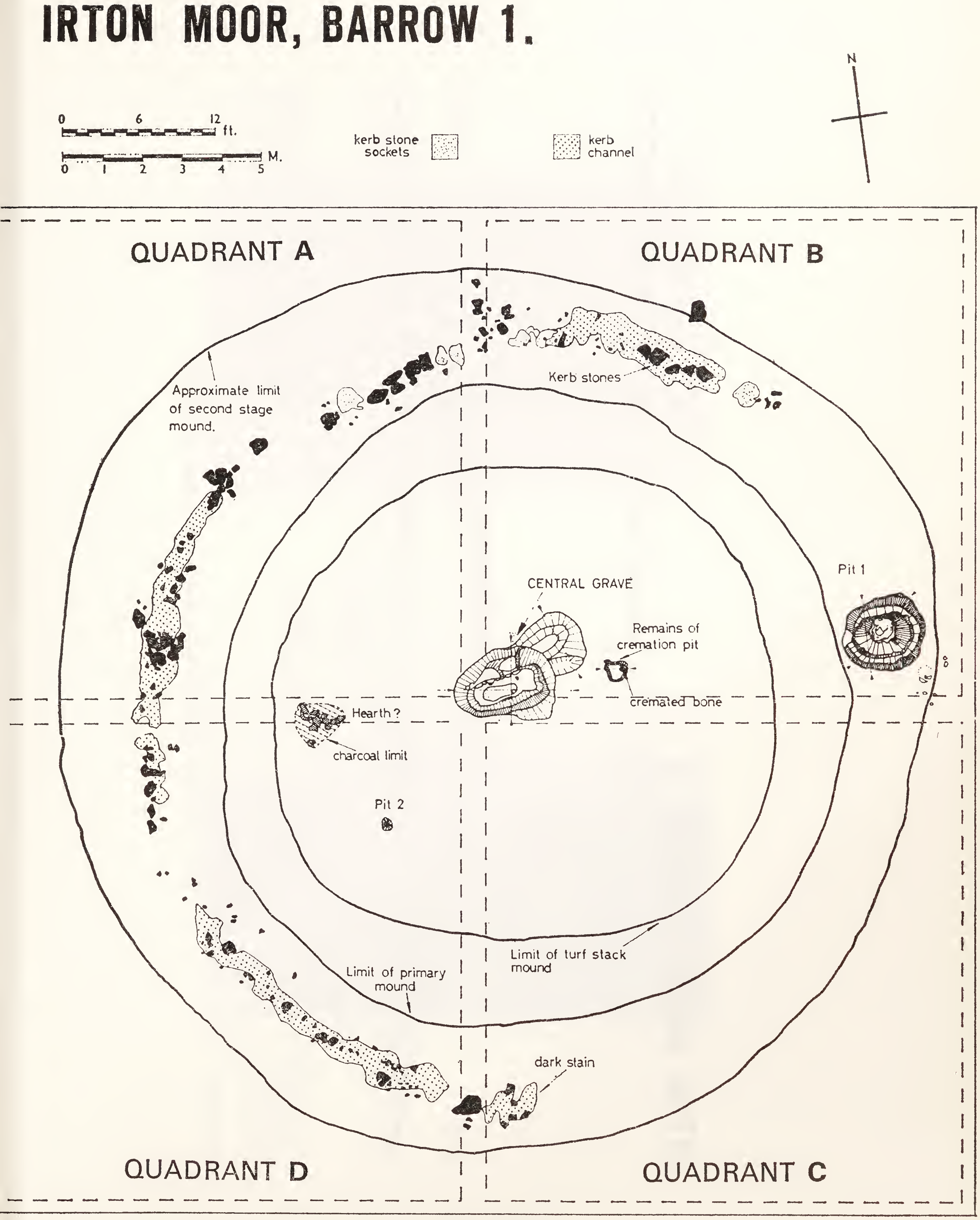

Fig. 4. Plan of Barrow

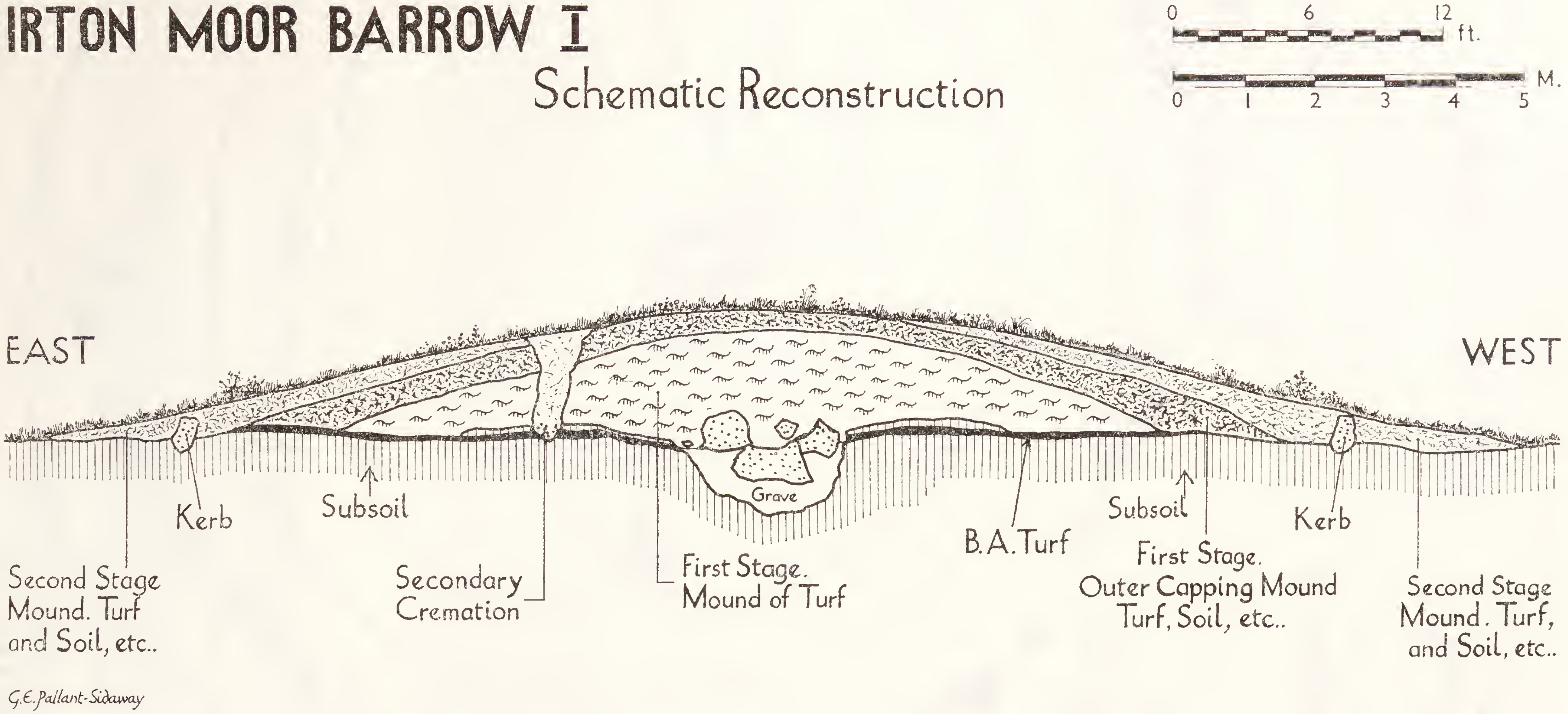
IRTON MOOR BARROW I
Schematic Reconstruction
0 6 12 ft.
0 1 2 3 4 5 M.
EAST
WEST
Grave
Kerb
Subsoil
Second Stage Mound. Turf and Soil, etc..
Secondary Cremation
First Stage. Mound of Turf
B.A. Turf
Subsoil
First Stage. Outer Capping Mound Turf, Soil, etc..
Kerb
Second Stage Mound. Turf, and Soil, etc..
G.E. Pallant-Sidaway

Fig. 5. Schematic Reconstruction of Barrow after completion of Stage II.

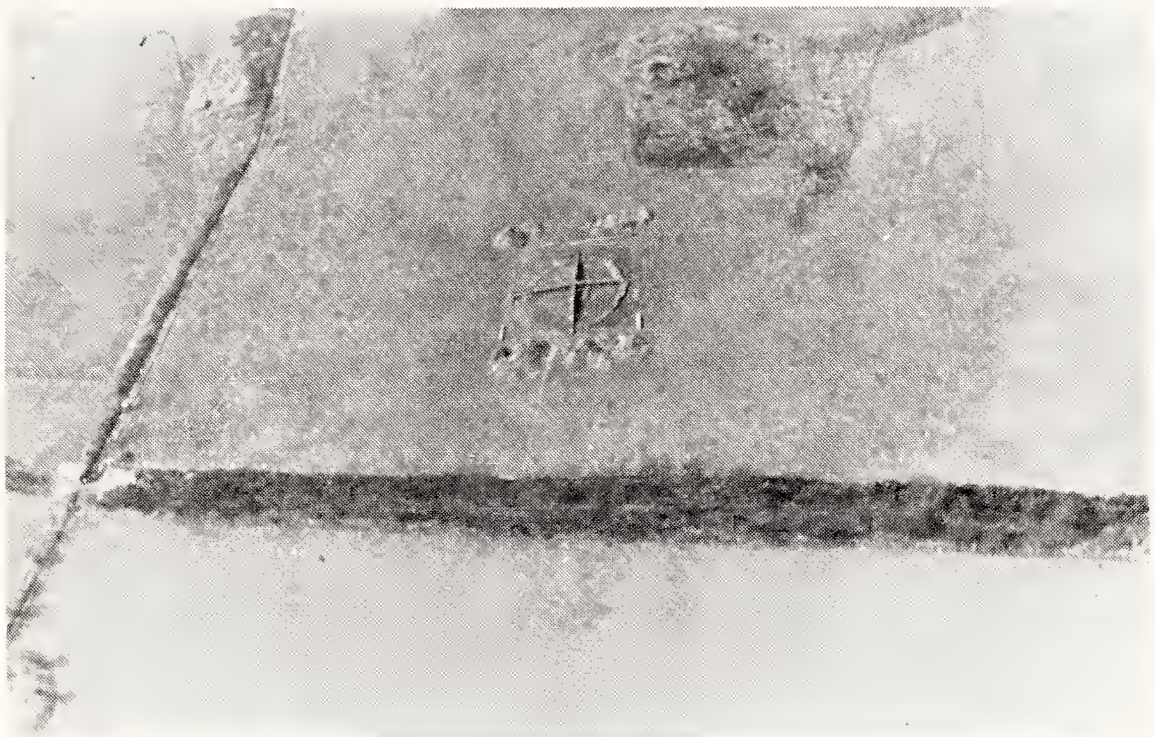

PLATE 1. Air view of site from the east.

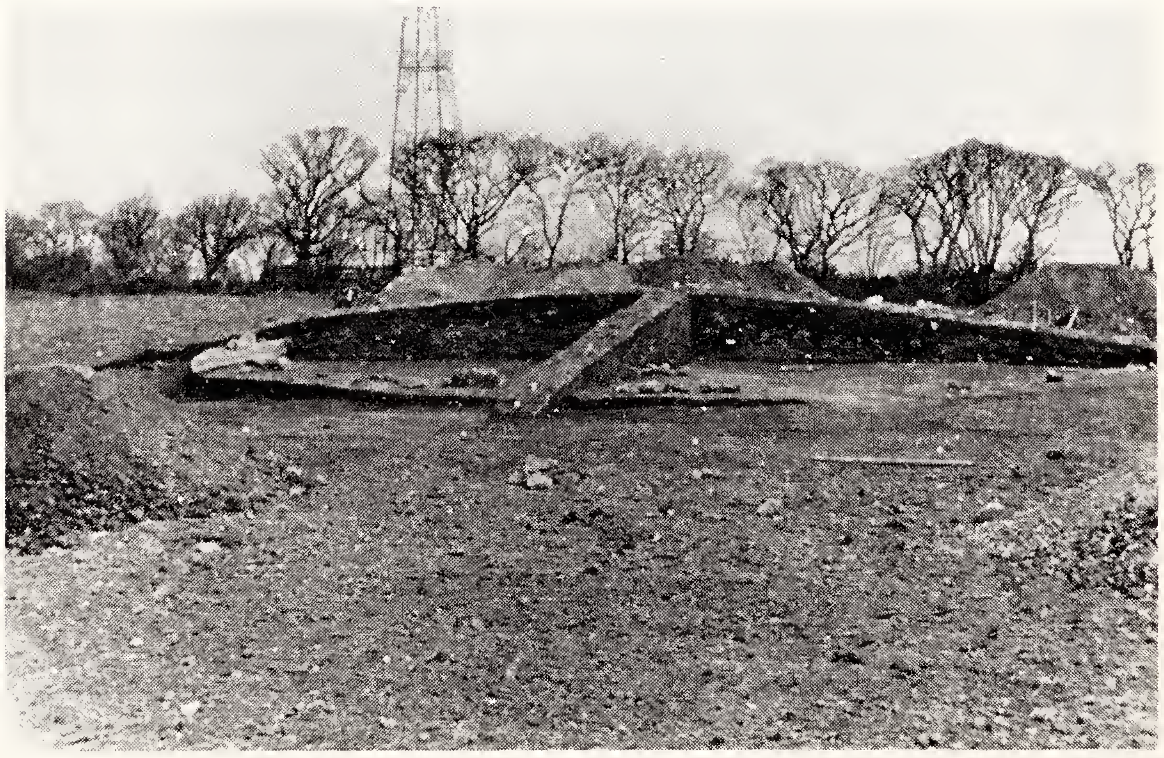

PLATE 2. View of north-south baulk and site from west. Quadrants C and D. Scale in feet.

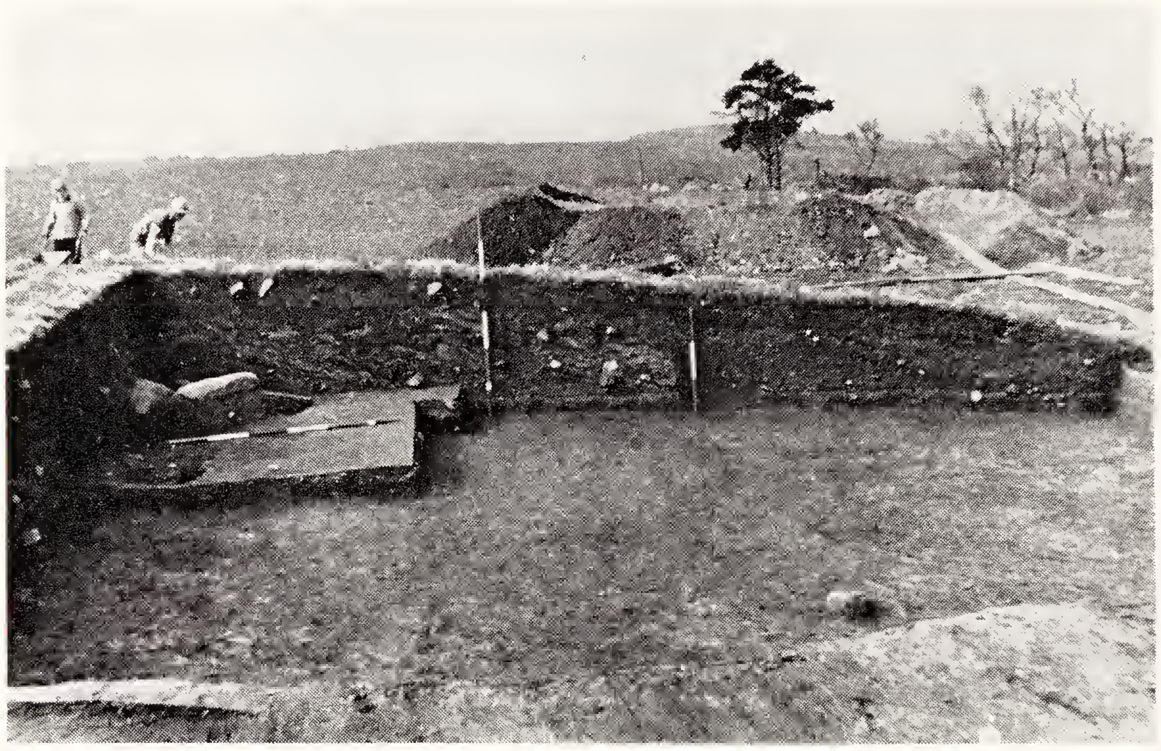

Plate 3. North-south baulk, turf stack mound and central grave from east quadrant A. Scale in feet.

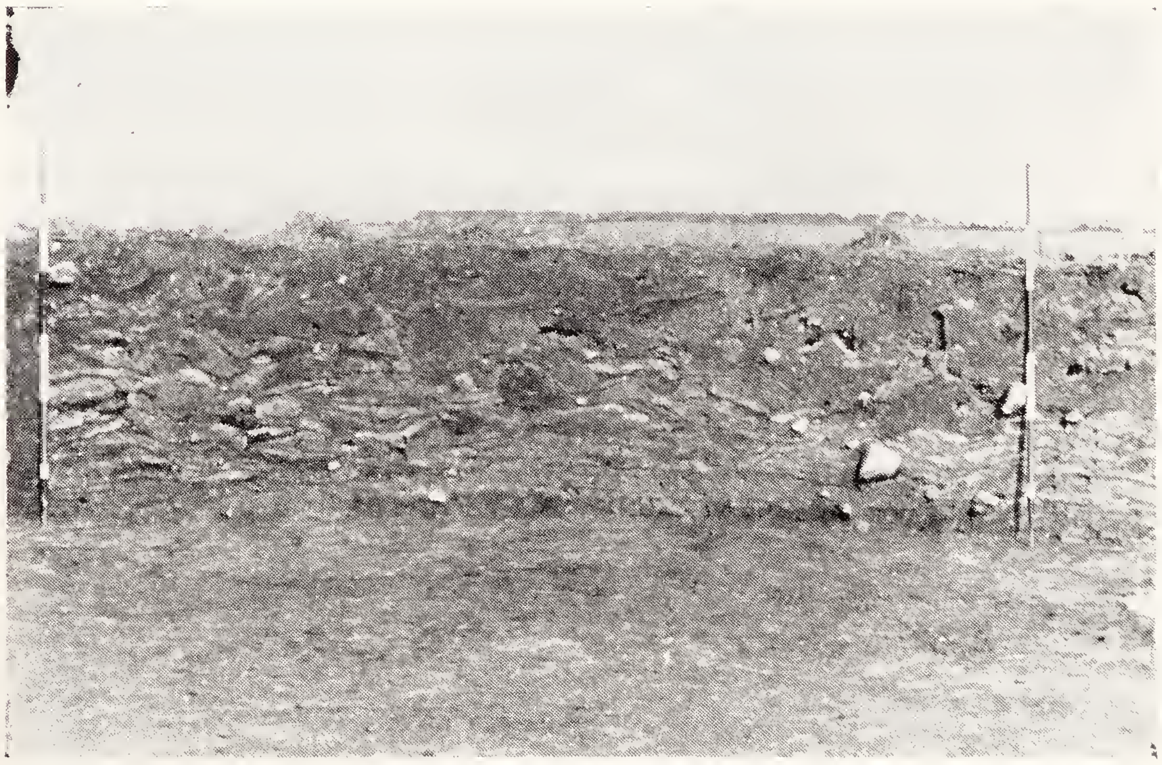

Plate 4. East-west baulk from south. Turf mound detail with original profile of light soil. Quadrant B. Scale in feet.

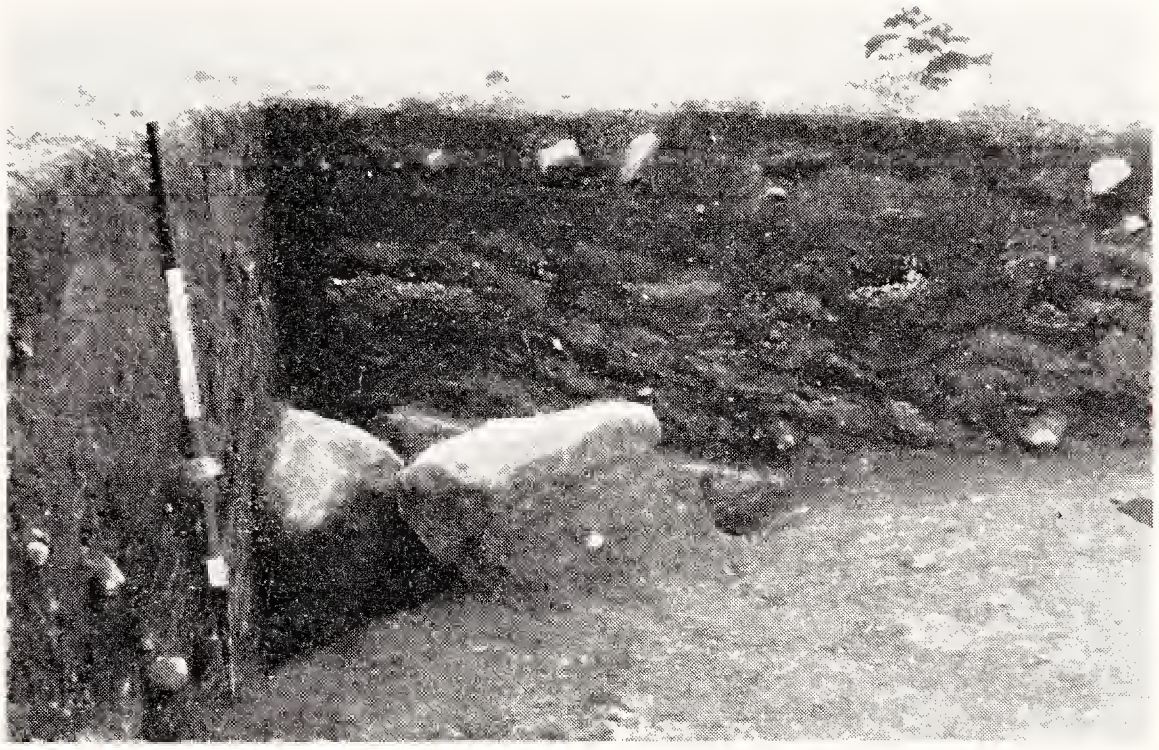

Plate 5. Central grave plugs and turf stack mound from east quadrant A. Scale in feet.

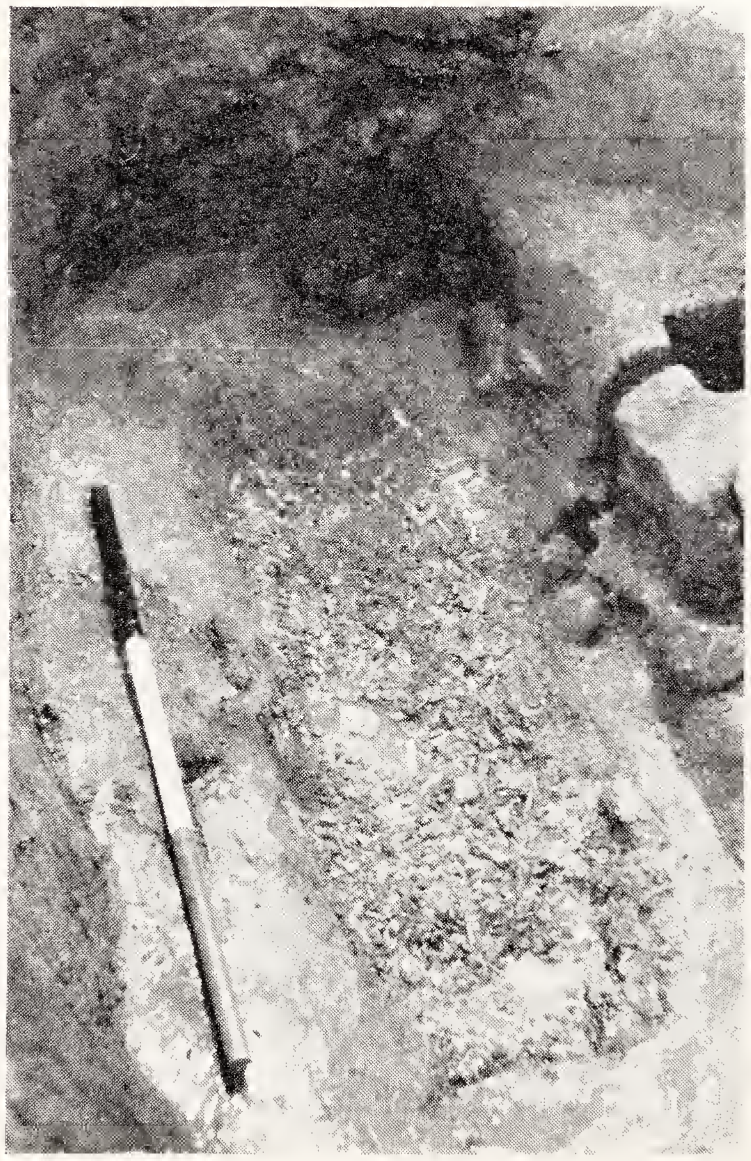

Plate 6. Bottom of grave: cremated bone in oak coffin. View from east. Scale in feet.

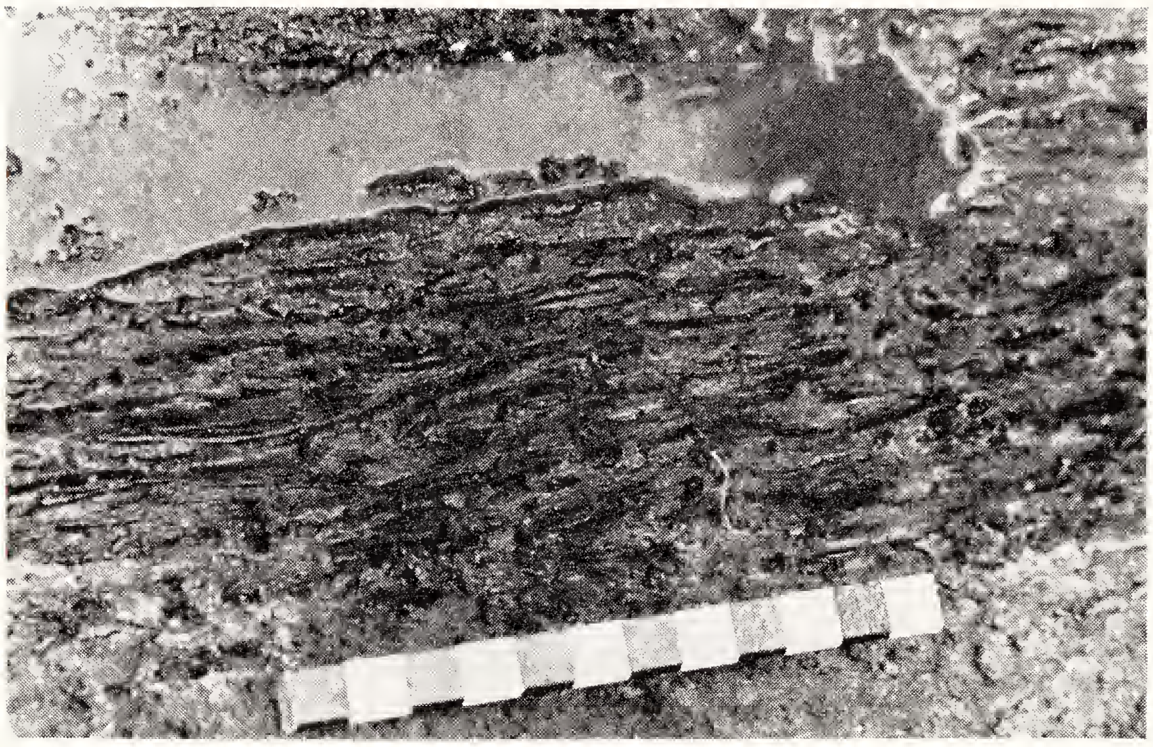

PLATE 7. Remains of oak coffin beneath cremated bone. Scale in inches.

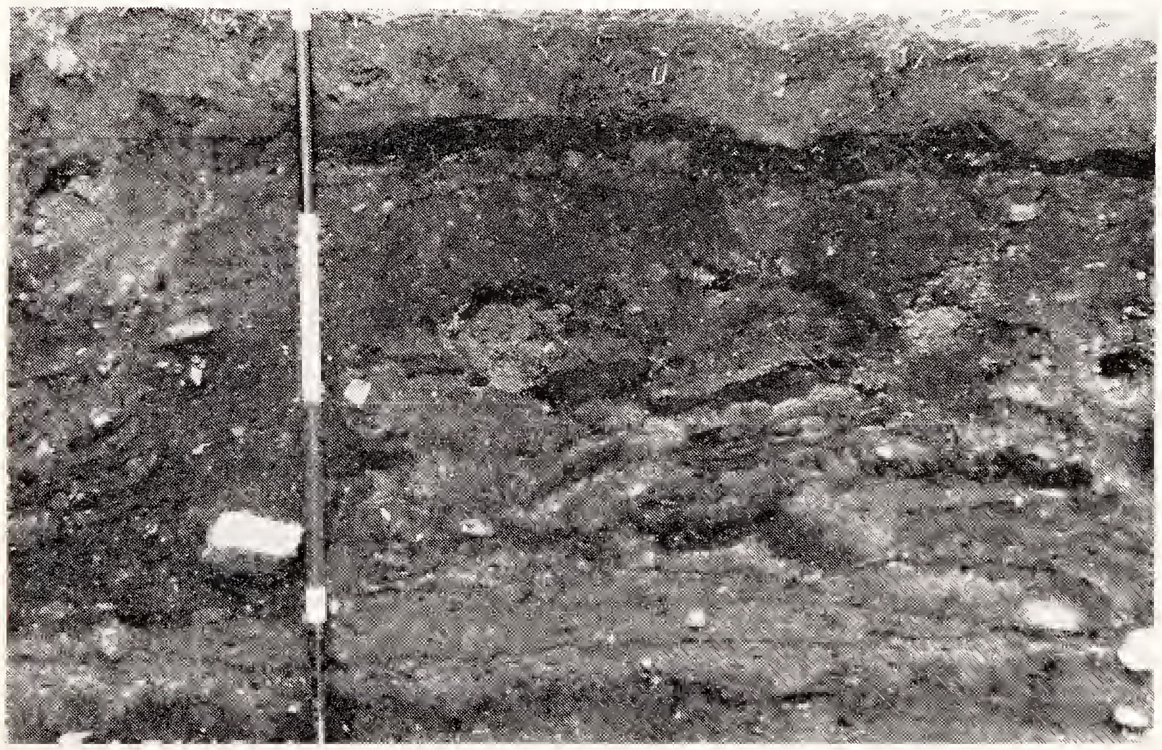

PLATE 8. Turf stack mound. Turves in layers. Quadrant A. (Prehistoric turf line beneath.) Scale in feet.

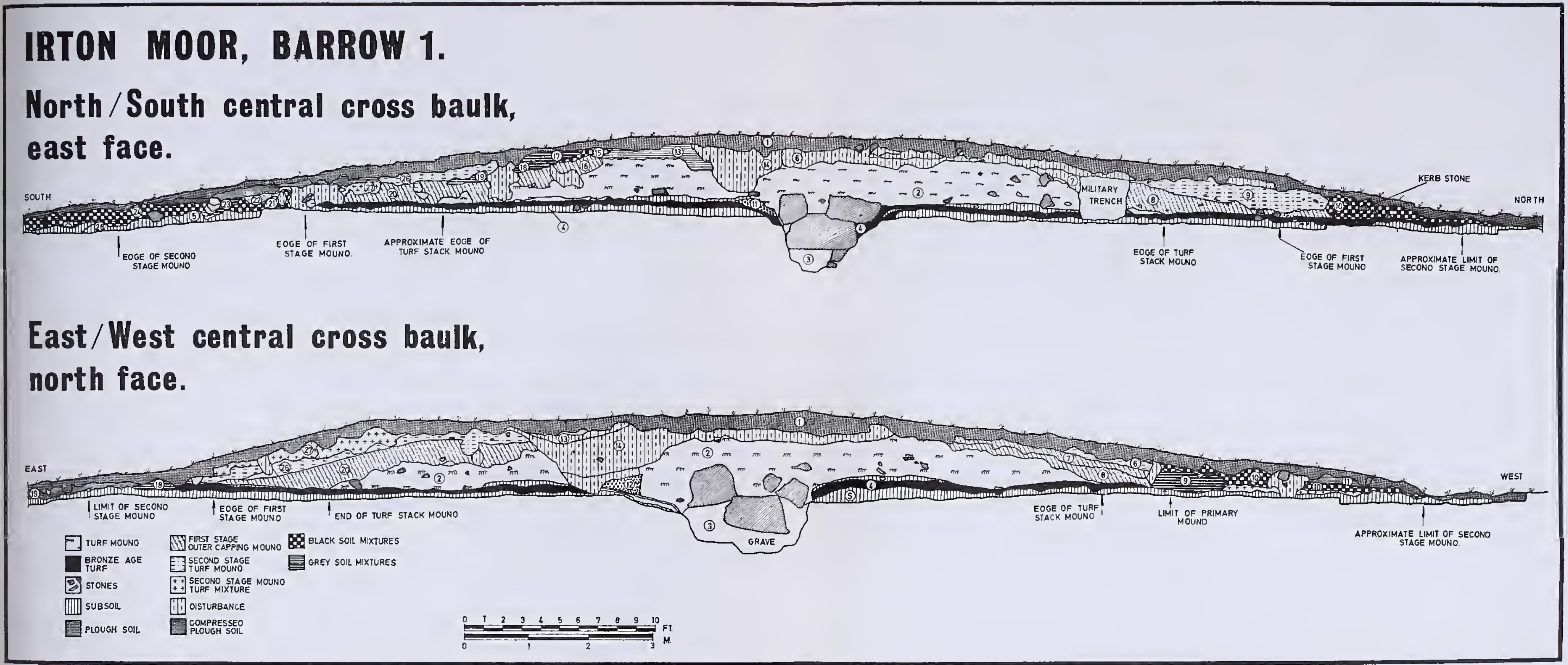
IRTON MOOR, BARROW 1.
North / South central cross baulk, east face.
SOUTH
NORTH
EDGE OF SECOND STAGE MOUND
EDGE OF FIRST STAGE MOUND.
APPROXIMATE EDGE OF TURF STACK MOUND
MILITARY TRENCH
KERB STONE
EDGE OF TURF STACK MOUND
EDGE OF FIRST STAGE MOUND
APPROXIMATE LIMIT OF SECOND STAGE MOUND.
East / West central cross baulk, north face.
EAST
WEST
LIMIT OF SECOND STAGE MOUND
EDGE OF FIRST STAGE MOUND
END OF TURF STACK MOUND
GRAVE
EDGE OF TURF STACK MOUND
LIMIT OF PRIMARY MOUND
APPROXIMATE LIMIT OF SECOND STAGE MOUND.
TURF MOUND
BRONZE AGE TURF
STONES
SUBSOIL
PLOUGH SOIL
FIRST STAGE OUTER CAPPING MOUND
SECOND STAGE TURF MOUND
SECOND STAGE MOUND TURF MIXTURE
DISTURBANCE
COMPRESSED PLOUGH SOIL
BLACK SOIL MIXTURES
GREY SOIL MIXTURES
0 1 2 3 4 5 6 7 8 9 10 FT.
0 1 2 3 M.

Fig. 6. Baulk profiles.

1. Plough soil.
2. Turf Stack Mound.
3. Grave infill.
4. Prebarrow turf soil.
5. Sandy yellow subsoil with patches of leaching.
6. Turf soil with russett staining and dark fawn tones.
7. Dark turf soil with russet staining and dark fawn tones.
8. Dark grey silty soil with patches of light grey, and small stones.
9. Light grey silty soil with some admixture of yellow subsoil.
10. Dull grey to black silty soil with some grey tones.
11. Mixture of yellow subsoil and prebarrow land surface.
12. Dull fawn soil with grey tones and charcoal flecks.
13. Dark grey loamy soil with some grey silt.
14. Disturbed turf soil.
15. Black loamy soil, some grey silt and specks of orange clay.
16. Black loamy soil, some grey silt and patches of turf soil.
17. Very light grey silty soil with lenses of light silt.
18. Light grey silty soil with lenses of silt.
19. Light grey silty soil and turf soil.
20. Dull grey to black silty soil with some turf.
21. Black to grey silty soil with yellow tones.
22. Turf soil with some silt and traces of subsoil.
23. Fawn to grey silty soil with brown tones.
24. Black peaty soil with grey and brown tones.
25. Black peaty soil with subsoil mixture.
26. Grey to black peaty soil with turf.
27. Light grey subsoil and turf mixture.
28. Leached very light grey silty subsoil.

fully placed in the grave until those uppermost were stacked well above the prehistoric turf line, forming a low cairn. This structure and the building methods employed are further discussed in the section on the grave. A closely-packed turf-stack mound sealed the cairn and did not filter between the stones, thereby leaving air-gaps from the top of the cairn to the bottom just above the coffin. When the turf seal was first broken water in the bottom of the grave could be seen through the stones. The turves were in turn covered with an outer capping of turf and soil. On the northern side of the inner mound the turves were black, but on the southern part they had some yellow subsoil attached. On the northern side the turves had been cut in rolls 2 ft. to 3 ft. long, about 12 in. in width and 2–3 in. thick (Fig. 6; Plate 8). Grey sandstone blocks, pebbles and slabs occurred amongst the turf in small quantities. There were signs of turf soil on the outer surface of the primary barrow indicating some time-lapse prior to the enlargement of the barrow. Over the outer surface was a ploughed mixture of soil, modern inverted turf, bottles, pottery, pantiles, iron objects, a gilded ring, bronze ring and corroded cartridges. When the surface of the outer capping mound was cleared after the removal of the topsoil the share runs of a broad and heavy plough were clearly shown where the disturbed soil had fallen into the furrows and contrasted with the turf mound, particularly on the south-east side where there were traces of yellow subsoil attached to the turf.

Hearth (Figs. 4 and 12)

Nine feet west of the central grave and partly under the east-west baulk were a group of sandstone slabs reddened slightly by fire and associated with charcoal scatter. Hearths frequently occur beneath barrows on the Wolds and moorlands in East Yorkshire.

Pit II (Fig. 4)

The small depression in the old land surface beneath the primary outer capping mound may well be a small pit, stake-hole, or solution hole in the old land-surface. The infill was a fawn silty soil.

The Central Grave (Figs. 5, 6, 7, 8, 9 and 10, Plates 5 and 6)

Beneath the primary mound was a central grave plugged by large blocks of stone. It was oval in plan, 7 ft. 6 in. long east to west, 4 ft. wide and 4 ft. deep at the lowest end when measured from the prehistoric land surface. A ledge varying from 8 in. to 11 in. wide encircled the grave at the bottom providing a trough in which the coffin timber rested. On the southern side and the western and eastern ends the ledge was cut out of the clay-like sandy yellow subsoil. On the northern side it was chiefly constructed of sandstone slabs (Fig. 8). This ledge served as a support for the blocks of sandstone which plugged the grave, preventing them from crushing the coffin and its contents of cremated bone. These blocks of stone had been slid into place side by side and one on top of another, Perhaps by using poles as skids to slide them in. Two broad shallow slots inclined downwards on the top of the eastern end of the grave and are obviously where such poles would be placed. This method would be the only way blocks weighing more than 2 tons could be placed in the grave without damage to the contents beneath; if they had been rolled in they would have crushed the coffin and its supporting ledge and it would have been difficult to align them correctly. There was no evidence of damage to the grave sides or bottom, only the imprint of the rock in the clay. The grave was then plugged with blocks rising above the old land-surface (Figs. 6 and 7), thereby creating a low cairn. Finally this cairn was covered by the turf stack inner capping mound which remained intact in the centre until the excavation.

Coffin and Trough (Figs. 8, 9 and 10, Plates 6 and 7)

Sloping down from the edge of the ledge on which the sandstone rested was a rough trough-like hollow containing coffin timber of oak, probably originally at least an inch in thickness. This timber survived fairly well in places although sufficiently soft to be

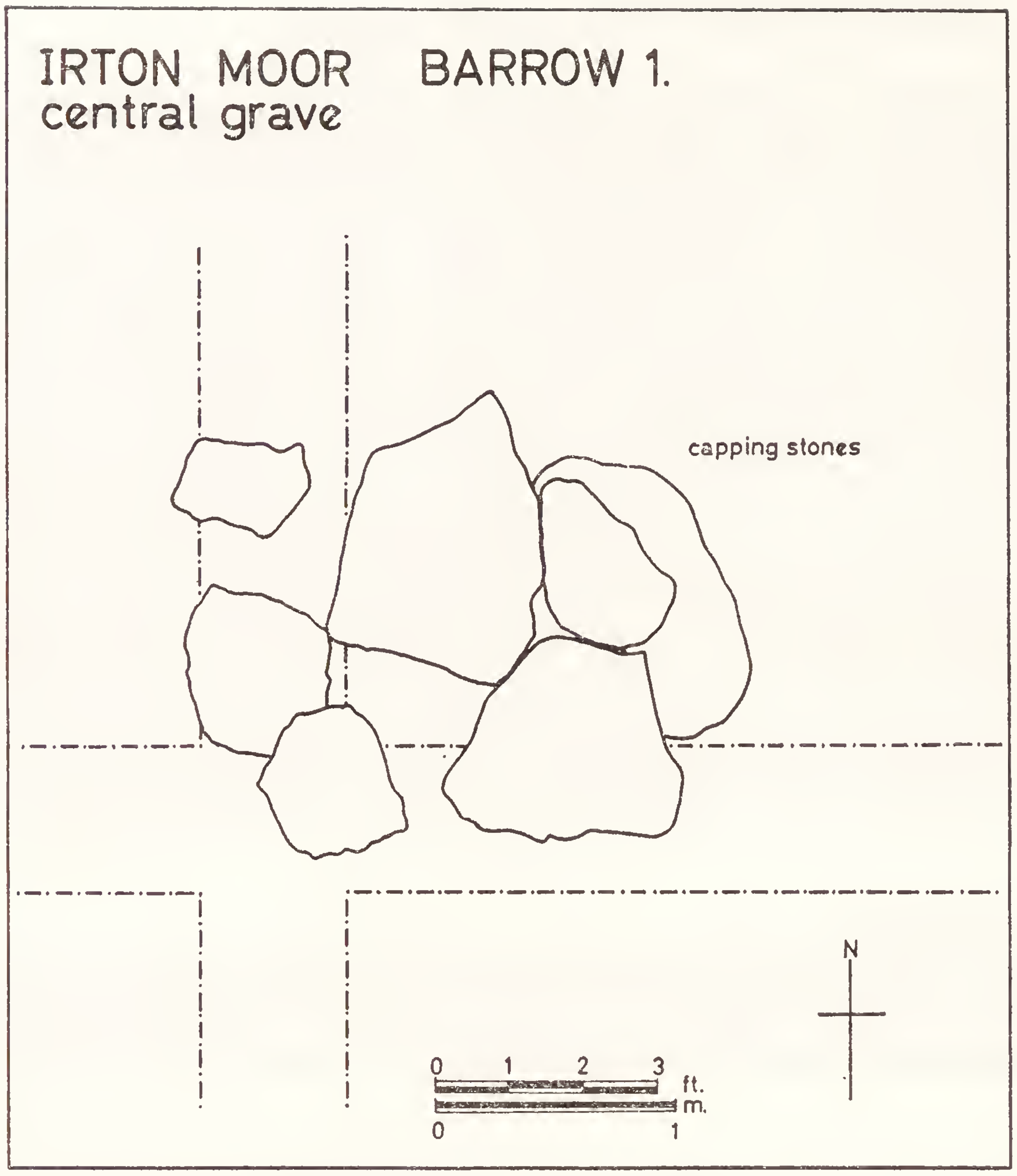

Fig. 7. Stones sealing grave.

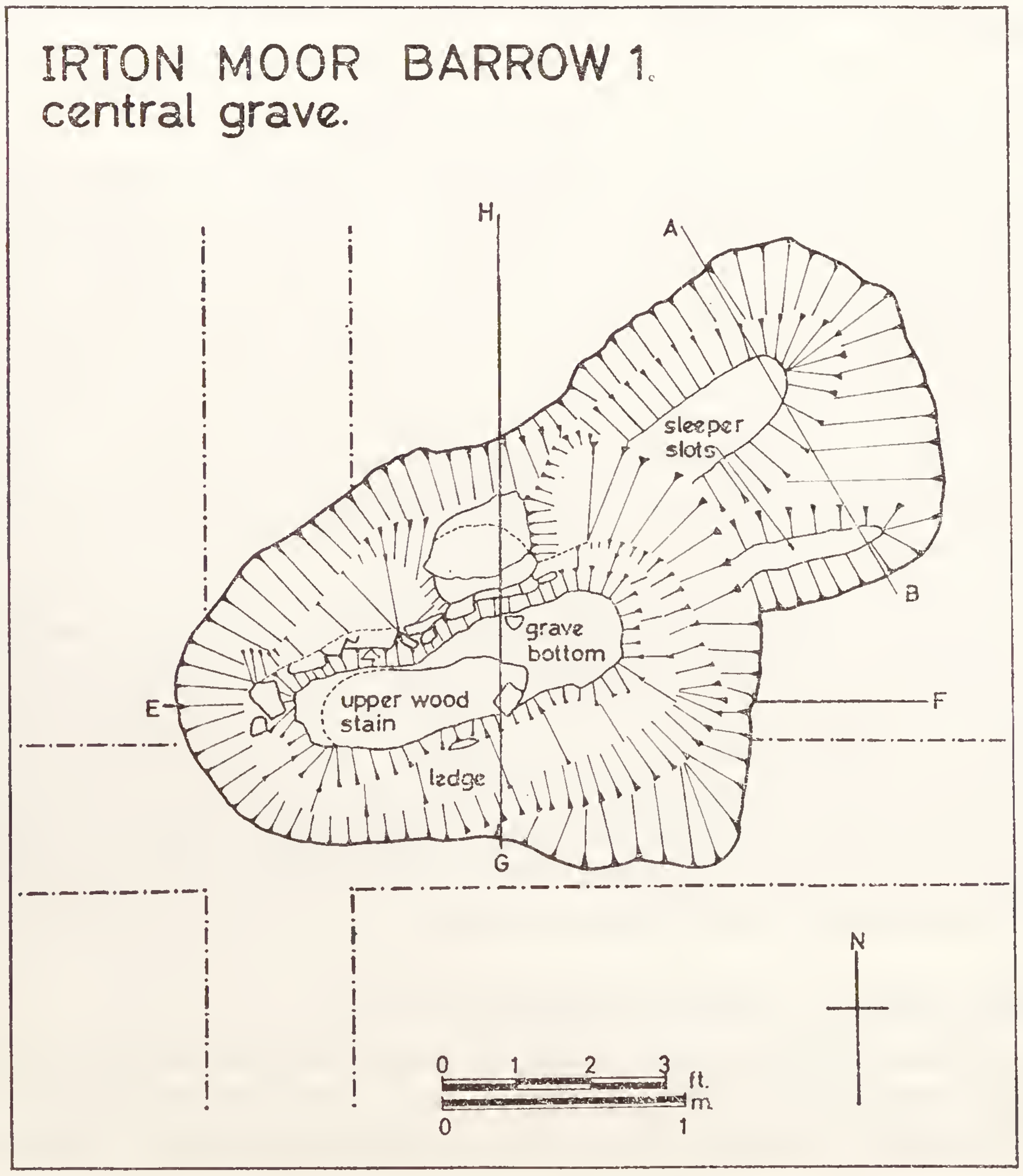

Fig. 8. Plan of empty grave.

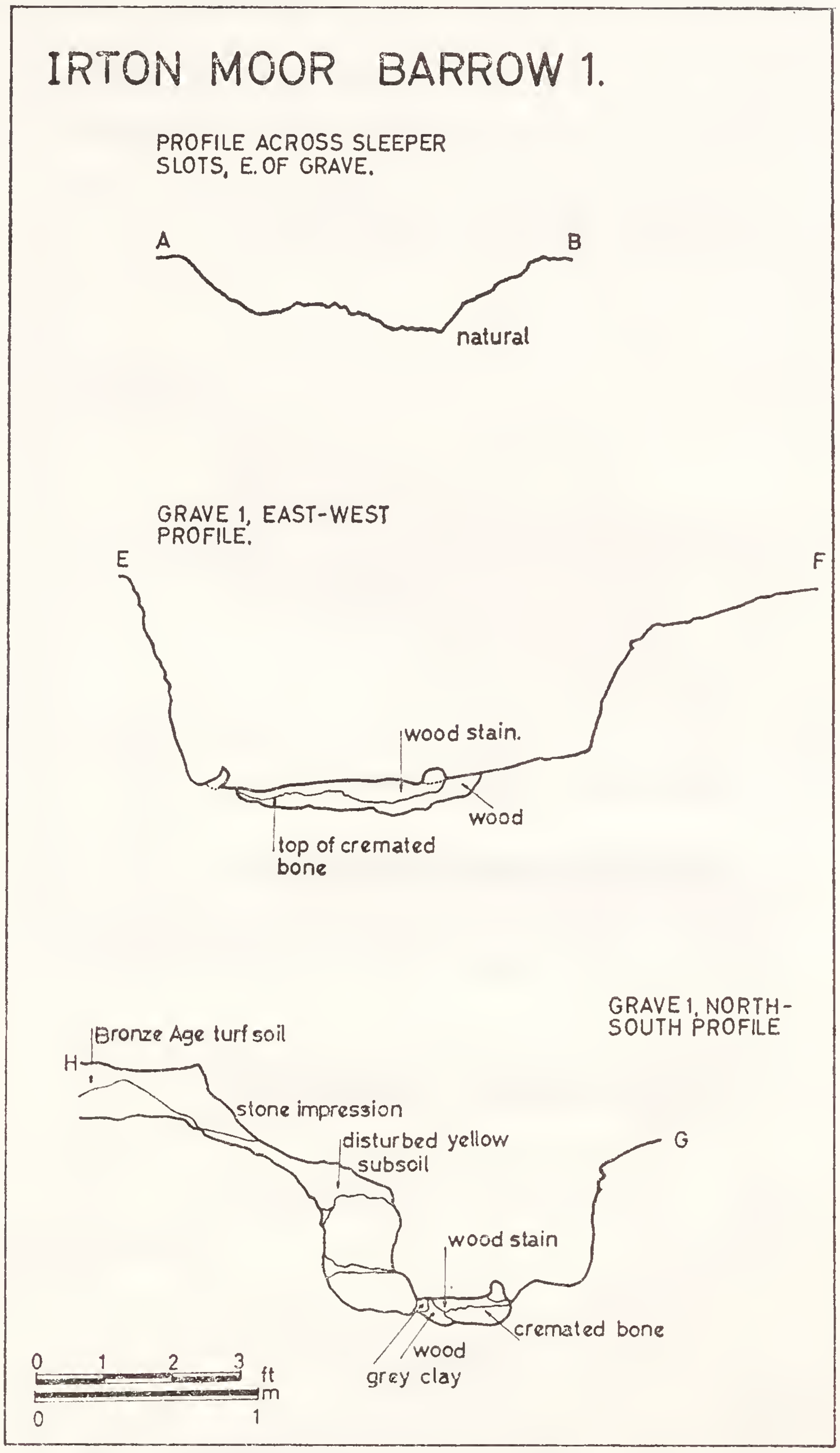

Fig. 9. Profile of sleeper slots and empty grave.

flexible. The grain was fairly outstanding due to the softer parts of the wood rotting away first (Plate 7). Resting within the trough of the coffin was a conglomerate mass of cremated human bones, 3 quartz pebbles, some charcoal, fragments of tanged and barbed arrowheads and the remains of the lid or upper timbers of the coffin, which was at first mistaken for turf soil. It was at first thought the material had sifted from above through the air spaces between the stones of the grave plugs. Excavation was hindered by water which seeped into the grave to the level of the top of the grave ledge. Wood had survived below this level, but not above, which explains why the lid had decayed. Water was reduced by pumping from an 18 in. deep 9 in. square sump cut into the ledge on the north-west side. The cremated remains were those of two people: a man of about 30 years of age and a youth of about 18; both were robust and may well have been related. There were traces of cremated hair in the form of fine spherical grains. After the removal of the coffin timber traces of long rod-like remains of soft black wood were clearly visible. These were about a quarter inch in diameter and were in line with the axis of the grave. It is just possible that they may be remains of wands or arrow shafts. On the other hand they could be the harder-grain parts of the lower outer surface of the coffin, the rest having decayed (Fig. 10). Covering the lower part of the coffin and the bone was a layer of dark soil about one inch thick containing fragments of decayed wood just visible to the eye. This layer has been identified as the remains of the coffin lid.

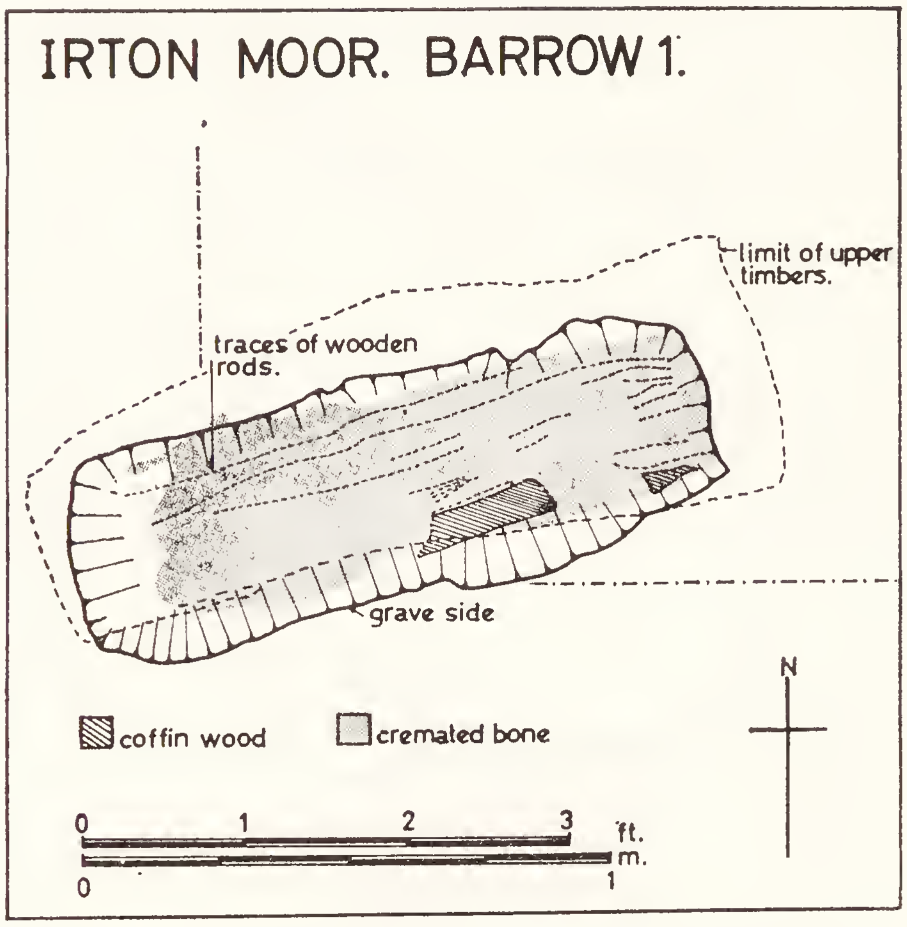

Fig. 10. Coffin timbers and lower section of grave.

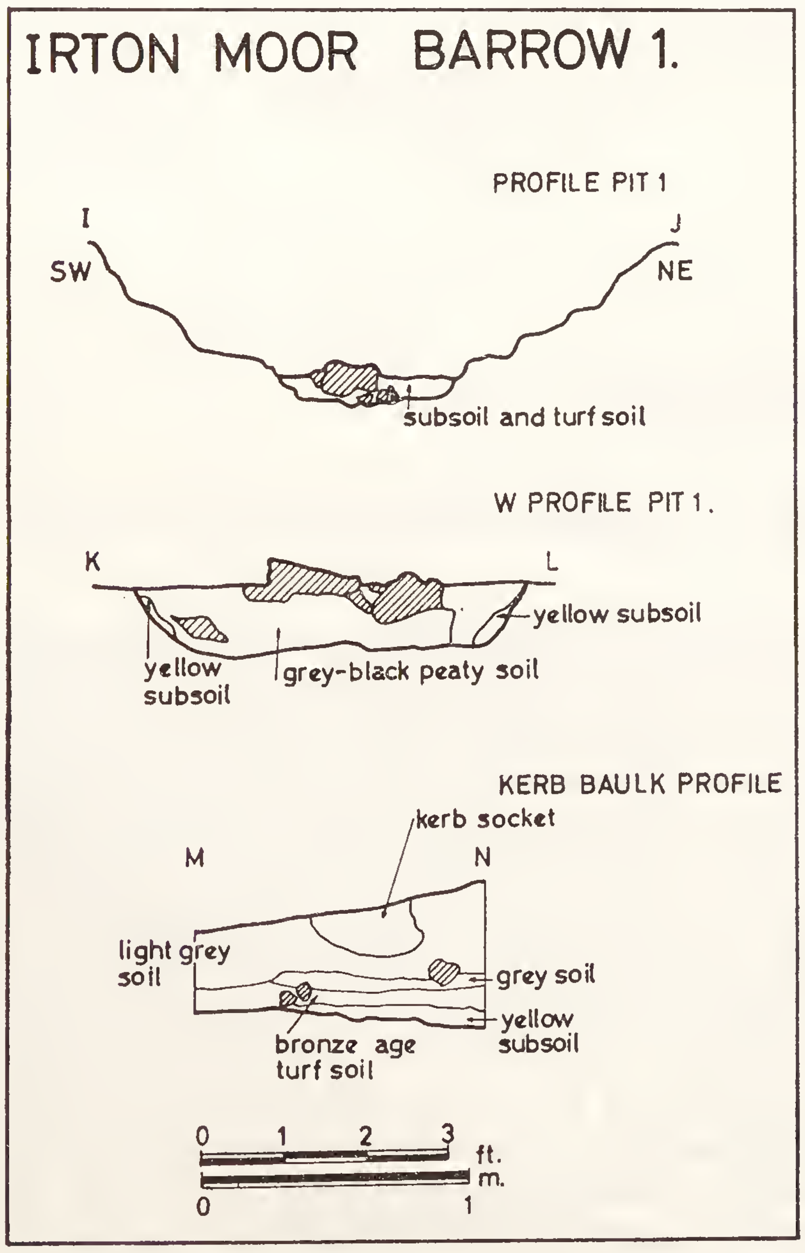

Fig. 11. Profiles of Pit I and north-west kerb.

THE SECONDARY KERB AND MOUND

The Kerb (Figs. 4, 5 and 6)

Covered by the secondary mound was a kerb 76 ft. in diameter of medium-sized limestone blocks set up on end and inserted in a slot cut into the old land-surface. In some cases smaller stones had been placed side by side on top of each other, in place of a single larger stone. No entrance was apparent but this may have been destroyed by ploughing. The kerb was well away from the base of the primary mound and can most certainly be connected with enlargement of the barrow itself associated with the robbed secondary cremation. As it showed no sign of weathering it is probably part of this second stage of construction. Furthermore, there was no sign of 'wash' on the old turf surface surrounding the stones, which would have occurred if the stones had been in the open for long.

The secondary mound, which was an enlargement of the barrow, was built on the top of the slopes of the primary barrow and consisted of turf soil, grey and yellow subsoil, stone and turf-soil scrape.

Pit I (Figs. 4 and 11)

Pit I was outside the primary barrow and beneath the kerb and additional covering of the second stage barrow. There was no evidence of modern disturbance with the

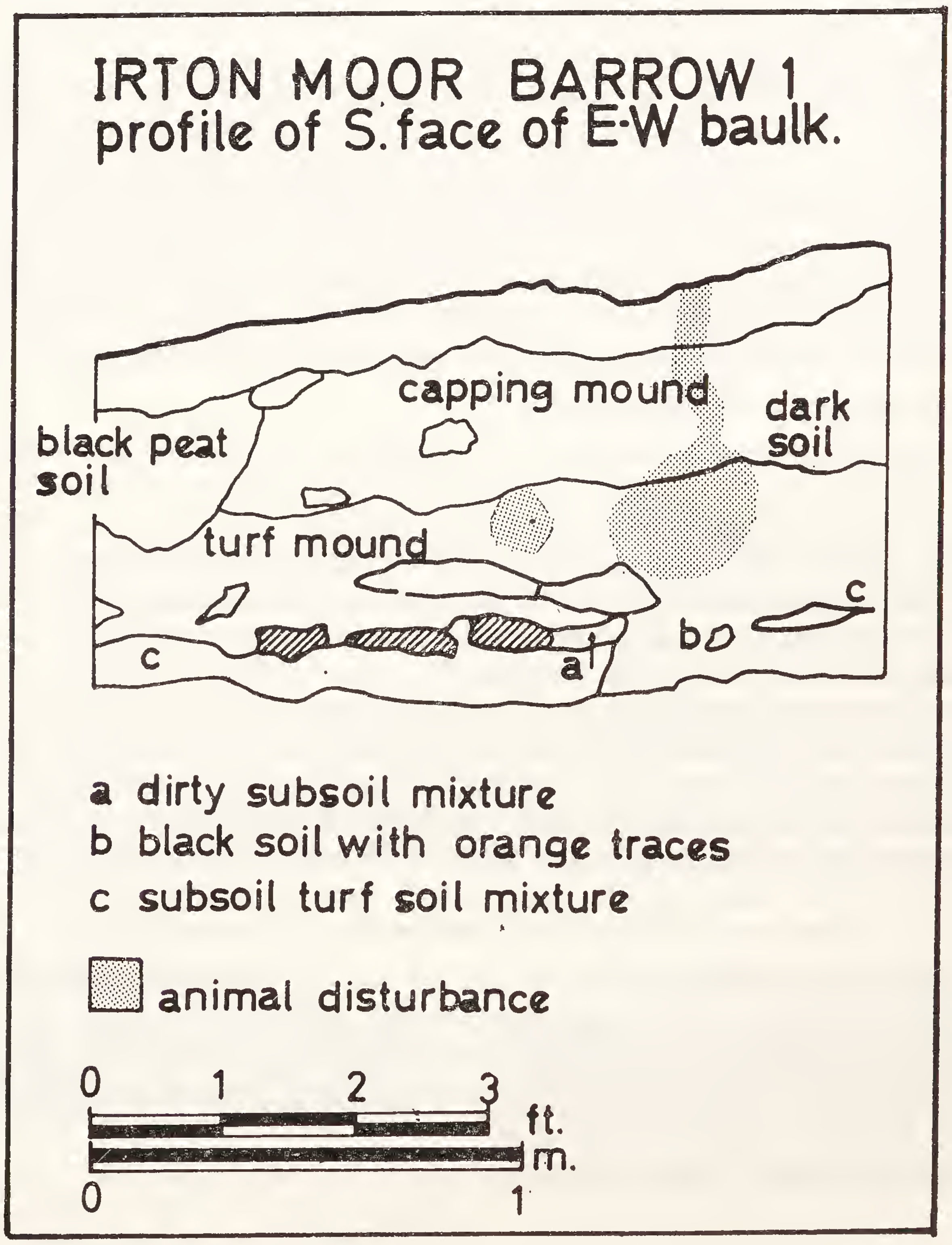

Fig. 12. Hearth profile.

exception of some modern blue-glazed sherds in a rabbit hole on top of the pit. The top of the pit was partly covered by stone and it was filled with various silty sand deposits which were solid and compressed and were not of modern origin. It is obvious that the pit was dug prior to the completion of the barrow's second stage.

Cremation Pit (Figs. 4, 5 and 6)

Immediately due east of the central grave, in a small pit at the bottom of the break-in were the disturbed fragments of cremated bone. This must be the remains of a further cremation robbed late last century, or early this, by antiquarians. The dating evidence for this disturbance were fragments of modern pottery and pantiles in the backfill. The robber hole was certainly too symmetrical to have been caused by rabbit diggers, or military activities. Local information suggests an urn or cremated bone was dug out of the barrow about 1900, but no record of this has so far been found. Mrs. J. D. Dawes has suggested the bone may have been part of the primary cremation. This the writer considers highly improbable as the cremation pit had been created by the break-in and there was no evidence of bone scatter around the grave on the old land-surface completely sealed in by the turf stack capping mound. It can fairly safely be accepted that the scattered cremated bone came from the remains of robbed secondary burial connected with the enlargement of the barrow (Figs. 4, 5 and 6).

BAULK PROFILES

East-West Cross Baulk Profile (Figs. 6 and 12)

The turf line and turf stack showed up clearly from the disturbed eastern end of the secondary mound to the centre, where the unbroken seal of the primary mound covered the cairn and grave. It will be observed that the funnel-shaped break-in, east of the grave, cuts through the old turf line from the surface. It is believed this was an antiquarian robber hole, and it contained disturbed cremated human bone at the bottom. Westward from the grave the turf mound remained intact, except for a disturbance near the surface associated with digging for rabbits. On the western side the position of the kerb in the profile was apparent, covered by the mixed-soil secondary barrow.

North-South Cross Baulk Profile (Fig. 6)

Somewhat disturbed and damaged by ploughing on the southern side, the position of the kerb was not apparent, but the disturbed lower parts of the secondary mound could be seen resting on the turf scrape of the primary. In the centre, just south of the grave capping, the disturbance caused by rabbit diggers was obvious. Fortunately the digging had not caused damage to the turf-stack seal covering the grave and cairn. From the central grave to the military trench the turf mound was intact and provided a first-class example of the turf rolls laid one on top of another and over stones (Fig. 6; Plate 8). The secondary capping of turf soil, turf and sub-soil scrape rested against the first-stage barrow and covered the kerb, which was not too damaged on the northern side. It will be noticed in the profile that the old land-surface is very obvious throughout the section and the grave cutting is clear. Samples were taken for pollen analysis every inch from the sub-soil to the surface just south of the military trench cutting.[7]

Summary of Stages of Construction, Use, and Decay

Construction Stages	*Archaeological Phases*
1. Cutting of central grave and plugging with large stone blocks. Construction of hearth and Pit I. Covering of grave and other primary structures by turf stack and turf scrape outer capping mound.	Insertion of coffin in grave. Placing in coffin cremated human bone and calcined tanged and barbed arrowheads.

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[7] Data to be published with the report on Irton Barrow II (forthcoming).

2.	Digging of cremation pit in primary barrow. Building of second stage barrow on top of lower slopes of primary barrow. Erection of kerb.	Burial of cremated bone in or without urn in cremation pit.
3.		Robbing of secondary cremation c. 1900
4.		Military trench and scatter of bottles, cartridges, etc. *c*. 1914–18.
5.		Digging for rabbits in centre of barrow.
6.		Plough damage *c*. 1966.

III

EVALUATION OF THE BARROW STRUCTURES AND HISTORY

The original, first stage, barrow contained a central grave with a shallow coffin, not planks, with the cremated remains of two males and tanged and barbed arrowheads. (Fig. 13) Plugging the grave were blocks of limestone. Capping this was a ditchless turf stack and turf soil scrape mound. This barrow was enlarged by the addition of a second stage mound covering the primary barrow's lower slopes and a kerb erected prior to the enlargement. This final phase of archaeological activity must surely be associated with a cremation believed to have been robbed by antiquarians early in the present century. Henshall indicates that some of the long cairns of Scotland were ritual enlargements of earlier cairns with passage graves.[8] Everything points to the enlargement being connected with the robbed cremation and not the former (Fig. 6).

Whereas considerable quantities of coffin wood survived, contamination from above through the air spaces between the stones ruled out an accurate radiocarbon determination. Furthermore, possible contamination during the excavation finally rules out any possible radiocarbon evaluation. This was due to the negligence of a guard.

This leaves only three means of arriving at an archaeological horizon for the primary barrow. These are barrow forms and type, cremations in coffins in East Yorkshire, and the tanged and barbed arrowheads.

Barrow Form

Round barrows in East Yorkshire are, with the exception of a few Late Neolithic examples, Final Neolithic or Bronze Age, ignoring the later Iron Age round barrows. One instance of turf-stack mounds in the Scarborough area, excavated in recent years, was Hutton Buscel II,[9] an inhumation in a deep grave with a Food-vessel as grave goods beneath the inner mound but outside the grave. Secondaries inserted in the top of the mound were a cremation in an enlarged food vessel, a large collared urn and a pygmy vessel with cremated bone in a small pit. In the case of another large turf-stack barrow, Hutton Buscel I, the mound covered a primary cremation, in a pit cut into the old land surface, accompanied by a bronze awl and capped by a small stone and covered by a 6ft.-square flat canopy of oak. Secondaries in this case were collared urns with cremations and a pygmy vessel.

Evidence from modern excavation on the Yorkshire moorlands in the area to the immediate west of Irton Moor thus appears to suggest that turf-stack ditchless mounds, with or without kerbs, are associated with Food-vessel inhumations, cremations in pits or coffins. Additionally the Sawdon Moor I Beaker barrow[10] had cremations burnt *in situ* in shallow pits in the centre and an S3 Beaker beside a hearth buried beneath the inner mound. The radiocarbon date for this cremation is 1530 B.C. ±90 years.[11] Therefore the overall evidence would suggest that turf-stack barrows with cremations in pits or coffins are slightly later than food vessel, or contemporary with them. The radiocarbon data for the Sawdon Moor barrow indicates that cremation in shallow pits was practised in the Scarborough area by people using S3 beakers around 1500 B.C. (Radiocarbon years).

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[8] A. S. Henshall, 'The Long Cairns of Eastern Scotland', Scottish Archaeological Forum, Glasgow, 1970; *The Chambered Tombs of Scotland*, Vol. II.

[9] M.P.B.W. Excavations *Annual Report 1965*.

[10] M.P.B.W. Excavations *Annual Report 1966*.

Coffins with Cremations

Mortimer records two cremations in coffins on the Wolds. These were at Towthorpe, Barrow C73[12] and Hanging Grimston Barrow 90.[13] The Towthorpe mound was 60 ft. in diameter and 7 ft. 6 in. high apparently with an inner mound of clay and a capping mound of local scrape. The coffin, which was near the centre, was 3 ft. 6 in. long and 1 ft. 5 in. wide and originally had squared ends. The cremated bone was in a heap at one end of the coffin; above was more wood, probably a decayed lid. No grave goods were in the coffin or beside it. The barrow construction was roughly similar to Irton Moor I and the method of burial the same. Barrow 90, Hanging Grimston was, with the exception of the heavy stone plugs and cairn, remarkably similar to the Irton Moor Barrow I primary mound. It was 82 ft. in diameter, 6 ft. high and had an inner mound of blue grey clay and a capping mound of soil and small stone. North of the centre were the remains of a small coffin, apparently, according to Mortimer, made from a tree trunk, resting on blue grey clay 1½ in. above the old landsurface; no mention is made of a lid. This of course may have decayed away. The cremated bone was inside the coffin and resting upon the bone was a Yorkshire-type curved and blunt-bladed battle-axe, which owes much to the Wessex-culture battle-axes. As shown by Clarke, axe-hammers have in three instances been associated with beakers.[14] One with an S1, another with an S2 and further one with an S3 Beaker. As the Yorkshire curved and blunt-bladed battle-axes must be later than the axe-hammers of Ashbee's Type II,[15] one of which was associated with an S3 Beaker, it would appear that the Hanging Grimston cremation could be placed at the end of Clarke's ceramic Final Neolithic and probably contemporary with S4 beakers.

Tanged and Barbed Arrowheads

Tanged and barbed arrowhead fragments, as already stated, were mixed with the cremated bone in the coffin. Tanged and barbed arrowheads have been associated in two cases with what Mortimer claims were Food-vessels at Acklam Wold and Driffield[16] and on a domestic site with S3 Beaker sherds at Craike Hill near Wetwang on the Yorkshire Wolds.[17] Arrowheads of the Irton Moor type which can be fairly safely allied with the 'Breton' derived type arrowheads associated with an S2(E) beaker in a grave at Mouse Low, Deepdale, Staffordshire,[18] and the probable association of another group with an S2(W) beaker at Lambourn, Berkshire. There are no direct carbon dates for the S2-S3 series. Clark's guess date for the Developed Southern Beakers (S2) is 1600–1500 B.C. In conclusion, bearing in mind the date of local turf-stack barrows, tanged and barbed arrowheads, cremations in pits, cremated bone in coffins with associated-material and carbon dates, a horizon for the Irton Moor I coffin can be approximately arrived at.

The cremation took place at a period when the Beaker tradition of coffin burial still survived and Piggott's 'Breton' derived type flint arrowheads were still in use and inhumation had been superseded by cremation. It is suggested that the Irton Moor I barrow's date should fall between 1530–1400 B.C. (Radio-carbon years) and not later.

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[11] N.P.L. 196, A.M. 660256, Sawdon Moor I.

[12] J. R. Mortimer, *Forty Years' Researches in British and Saxon Burial Mounds of East Yorkshire* (1905)

[13] *Ibid.*

[14] D. L. Clarke, *Beaker Pottery of Great Britain and Ireland* (1970) Vol. I and II.

[15] J. R. Mortimer, *Ibid.*

[16] *Ibid.*

[17] T. G. Manby, *Ant. Journal,* 1965.

[18] D. L. Clarke, *Ibid,* Vol. II.

IV

THE FINDS

THE ARROWHEADS

By Elizabeth Healey

The two barbed and tanged arrowheads, Fig. 13. F1 and F2, were the only grave goods associated with the central cremations and the coffin. They are burnt and very brittle. Both are now incomplete.[19]

F1: The flake scars are flat and of the type usually associated with pressure flaking; they extend all over both faces and are at an angle to the main axis of the arrowhead. The flaking is flatter on one face than on the other, as the transverse section indicates. Side (a) is worked from the margins inward, whereas side (b) has truncated scars along the edge suggesting that this was the first side to have been worked. Very small regular flakes have been removed along the edge of the arrowhead: this is perhaps a form of 'strengthening' to prevent the very thin edge of the flake from splintering. One edge is slightly serrated. The notches forming the barbs have been steeply retouched from side (b). On side (b) however the retouch in the notches is minimal. The barbs are shorter than the expanded tang and have slightly rounded ends (for the purposes of classification on the basis of arrowheads shape (see below) they are to be seen as square rather than pointed). The sides of the arrowhead are straight.

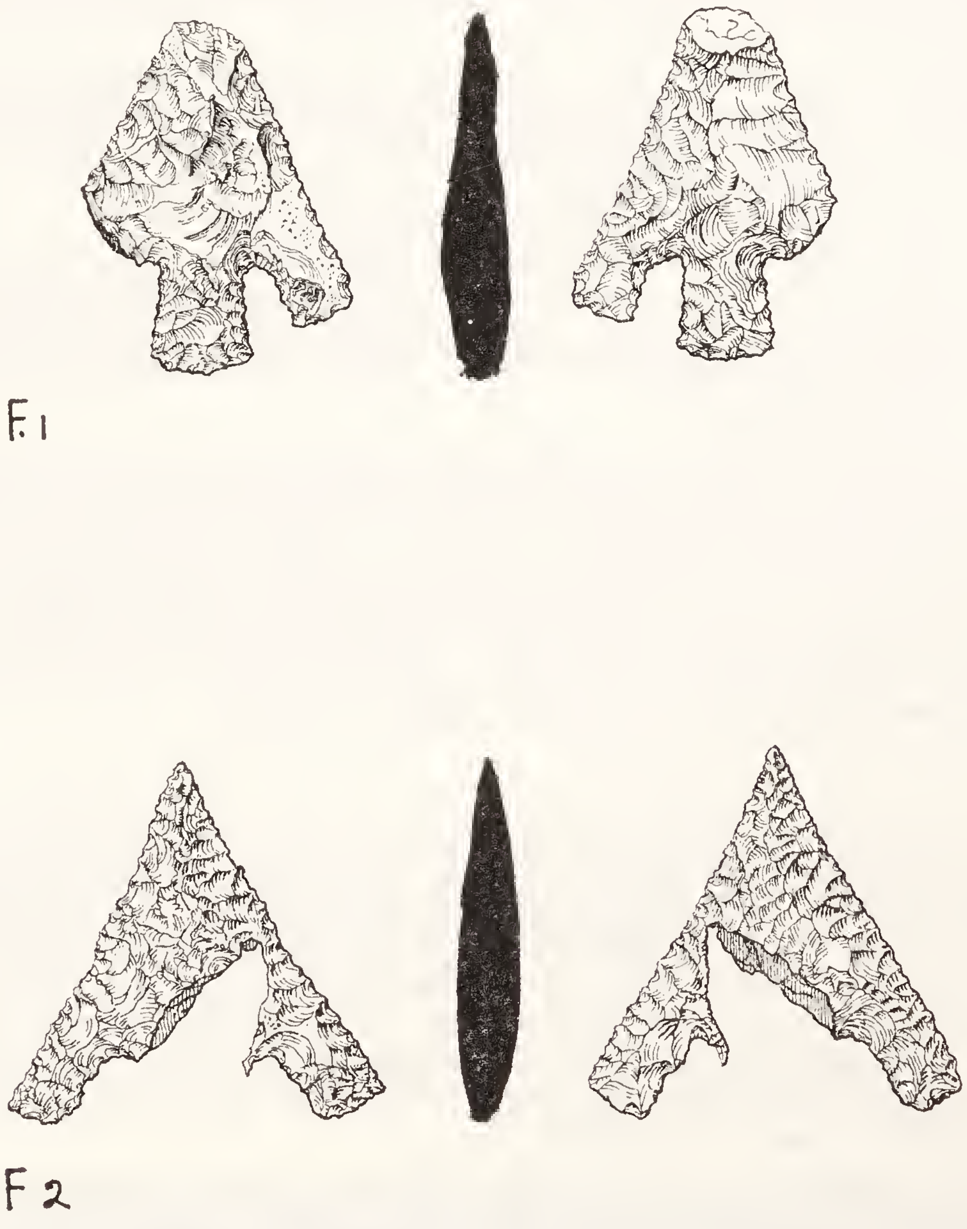

Fig. 13. Tanged and barbed arrowheads.

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[19] They were drawn by Mr. G. Pallant-Sidaway, and Mr. R. Robertson-Mackay has read through this note and made many helpful suggestions. To both the above I am extremely grateful.

In outline the arrowhead forms a truncated lozenge or angular mitriform shape, when a line is projected along the ends of the barbs to join up with the base of the tang.

F2: Flat parallel flake scars of the type usually associated with pressure flaking cover both faces. This flaking has been executed from the margins inward. On side (a) the retouch meets at a central ridge, but on side (b) it is much flatter. The irregularity on the edges is caused by the point where pressure was applied to produce the flat flaking and is not a series of deliberately made serrations. The barbs have squared chisel-like ends and are set at an angle. The tang is broken but it seems likely that it was about the same length as the barbs or perhaps a little longer. The notches have been formed by retouch from both faces.

In outline the arrowhead is mitriform with slightly concave edges.

Since no other finds were associated with the cremations in the coffin it is necessary to examine the shapes and associations of barbed and tanged arrowheads with burials, and then to consider them in the context of the coffin and cremation.

SHAPE

Barbed and tanged arrowheads have been classified according to their shape and certain shapes have been attributed to a particular pottery type. This is not entirely satisfactory since different shapes have been found together in closed groups, for instances at Breach Farm (Grimes 1938, Fig. 6). Also one shape is not necessarily confined to one ceramic style. However it is possible to see preferences for arrowheads of certain shapes accompanying some pottery styles. (In describing the outline of an arrowhead an imaginary line is projected from the line of the ends of the barbs to join up with the base of the tang.)

The main shapes are:

(i) Heart-shaped or ogival in outline with obliquely trimmed barbs which have square ends. Associations: Developed Southern Beakers (Clarke 1970, 218) and related to Armorican Bronze Age and Wessex Culture (Piggott 1953, 76).

(ii) Equilateral triangle in outline with square ended straight barbs and tang forming the base. Associations: Wessex Culture (Grimes 1938, 117f) and probably R. A. Smith's Beaker type (Smith 1926, 91).

(iii) Mitriform or with an equilateral triangular outline, with curved pointed barbs. Associations: Beaker W/MR and S1 (Clarke 1970, 98).

Other classifications are based on the length of the barbs and tang:

(iv) Barbs developed at the expense of the tang and may be prolonged to swallow tail curves. Associations: unburnt burials (Smith 1926, 105); swallow tailed type rare (Ashbee, 1960, 104).

(v) Tang exaggerated in length or breadth, sometimes both and with small barbs which may be rudimentary. Associations: Cremated burials (Smith 1926, 105) and cp with those from Tregulland Burrow (Ashbee 1958 , pp. 174 sq.).

A rather different type comprises:

(vi) Large slender javelin type or Irish type projectile points. These fall into two groups, 'arrowheads' and 'spearheads', separated on the basis of weight (Green 1972, 239 and Fig. 2), the dividing line being about 13 gms. (including bindings), which has been suggested as the maximum acceptable weight for an arrowhead (Rausing 1967, 1964). Associations W/Mr Beaker (Clarke 1970, 98) and Early Bronze Age (with miniature vessels from Doddington, Northumberland (Green 1971, 239)).

The Irton Moor I arrowheads do not fit any one of the above shapes exactly, but the angular form and square ended barbs suggest that they are most like shapes (i) and (ii).

ASSOCIATIONS

Flint arrowheads accompanying burials under round barrows are almost exclusively of the barbed and tanged form (Ashbee 1960, 104). They are present in varying numbers and it is not unusual to find more than one in a grave. They form part of the basic assemblage found in Beaker inhumation graves (Clarke 1970, 264) and shape (i) usually occurs with Developed Southern Beakers (Clarke 1970, 218). At Stanton Harcourt, Oxon., an inhumation in a coffin was accompanied by a N/MR Beaker, a bone ring pendant and seven barbed and tanged arrowheads of varying form, but one is not unlike those from Irton Moor. (Grimes 1960, 161, Fig. 67). The only example of an arrowhead with a Beaker [S2(W)] and Cremation is from Cwm Gar, Brecknock., (Clarke 1970, App. 3, 6). The arrowhead is a poor example and probably of shape (iii), (Piggott 1963, 77).

Barbed and tanged arrowheads are also found in Wessex culture cremation and inhumation graves. Arrowheads accompanying cremations include those from Breach Farm (Grimes 1938, 115 and Fig. 6) shape (ii); Aldbourne, (Greenwell CCLXXX, Piggott 1938, App. VII, No. 33) damaged, but probably shape (iii); and Craigscorry, Inverness., where a burnt barbed and tanged arrowhead (shape iii or v) accompanied a partially burnt body and a damaged dagger, with a mid rib and groove, in a long cist (Henshall 1968, 173, 177, 190 and Fig. 43, 12).

Some Food Vessel inhumation graves also yielded barbed and tanged arrowheads (Abercromby 1912, 136 ff), some being a similar shape or of related form to the Irton Moor arrowheads, for example Ganton, Yorks., E.R. (Greenwell, XXI, 161), Rudston (Greenwell LXIII, 245, Fig. 29) and Hanging Grimston (Mortimer, Gp. V, No. 9, p. 106, Fig. 255).

They have also been recorded with Collared Urns of the Primary series (Longworth 1961, Nos. 278 and 285, both from Yorkshire), and other cinerary urns (Abercromby 1912, 75 f). These arrowheads tend to have short, pointed barbs, but an example from Foulford resembles Irton Moor F1 in shape (Callandar, 1921, 42 ff).

CONTEXT

Barbed and tanged arrowheads of varying shapes then are found associated with several traditions, and it can be seen that they occur more frequently with inhumations rather than with cremations.

The Irton Moor arrowheads cannot be matched exactly in shape but similar or related shapes seem to occur with Developed Southern Beakers, and N/MR Beakers, the Wessex Culture and in some Food Vessel contexts. The association of the Irton Moor I arrowheads with a coffin and cremation may also suggest Wessex Culture contacts and perhaps also contact with Collared Urns.

The date suggested for N/MR and Developed Southern Beakers and the Wessex Culture and Food Vessels is in the Final Neolithic somewhere between 1800 and 1400 B.C. and probably towards the end of that period. (Clarke 1970, Fig. XIV and 275) Longworth has shown that the Primary Series of Collared Urn is already in existence by 1540±B.C. and that the Secondary Series begins by about 1400±B.C. so that a date towards the later part of the Final Neolithic may be suggested for the Irton Moor arrowheads. This general horizon is not out of keeping with the date suggested elsewhere in the Excavation Report for the form and type of the barrow and for cremations and coffins in E. Yorkshire (v.P. ......) The difficulty in assigning the cremation, coffin and arrowheads to an exact tradition may perhaps serve to illustrate the interrelationship of several traditions at about this time.

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IRTON MOOR BARROW I, THE CREMATION

By J. D. Dawes

The central grave was found to contain the remains of a wooden container inside which was a great quantity of cremated bone fragments. In addition a small ritual pit to the east of the grave had a handful of burnt bones. The bones were washed to remove as far as possible the clay and sand mixed with them and when thoroughly dry were sorted into categories according to size and as many fragments as possible were specifically identified. Although the quantity of bone in the central grave was large its condition was homogeneous and there was no evidence to suggest that all the bones had not been deposited simultaneously, already mixed from a single pyre.

CENTRAL GRAVE

The total weight of washed and dried bone was 4,055 gm. Of this 1,240 gm. passed through a 10 mm. sieve but not through a 1 mm. mesh. In this group parts identifiable were 65 tooth roots or part roots, one with crown still intact, 10 fragments of tooth crown, 10 terminal phalanges and 23 whole or part intermediate phalanges, phalangeal epiphysial discs, and a portion of lesser wing of the sphenoid bone from the left side. A little over half the total deposit by weight, 2,370 gm., lay in size range between 10 and 50 mm, while 425 gm of the material was in large pieces over 50 mm in length, the longest being 130 mm. All parts of the body were well represented and the presence of 2 odontoid pegs, 2 right and 2 left petrous temporal bones, 2 right mandibular condyles, and a large proportion of 2 upper and lower jaws indicated that the deposit was the remains of 2 individuals. A portion of frontal bone showing very well developed supraorbital ridges and a massive right mastoid process suggested that one of the individuals was an adult male. While some of the vault fragments indicated that fusion of sutures may have started on the internal surface there were no signs of extensive suture closing so that it is probable that neither person was much more than 30 years of age. The presence of a complete third molar, probably unerupted, and some of the terminal phalanges with recently fused epiphysial discs, some intermediate phalanges without such fusion would indicate that the second individual was about 16 years of age. While the older individual appeared to be robust the difference in size of corresponding bones was not very great, which suggested in view of the immature state that the younger individual must have been robust and large. In the absence of any definite sex characteristics attributable to this younger skeleton, the size must suggest that this was a boy. Comparison between the 2 mandibles showed a striking similarity of line which would indicate a degree of similarity, possibly of kinship.

The only evidence of disease was the presence of plantar and medial bony exostosis on the proximal joint of one mature first terminal foot phalange. One fragment of humeral or femoral head had apparently been cut or sliced but whether before or after death it was not clear.

The bones were homogeneous in colour, grey-white-buff, and condition, well burnt, hard, well preserved, evenly calcined with no stress of heat on one or other body part. The broken frontal bone was differently burnt in the 2 fragments although they joined. This suggested that the parts were separated while in the fire, probably by poking or sliding. The bodies must have been placed on rather than under the pyre. While some of the larger pieces may have been broken for packing the large number of big fragments showed that no systematic crushing had occurred.

During washing and sorting a number of pebbles and pieces of stone were removed from the deposit. Among these were 2 calcined barbed and tanged flint arrowheads and also a number of brown clinker-like pieces, all very small which could be the remains of cremated hair. (Wells C., *Antiquity* 34, (1960) 29–37).

Cremation Pit

This pit to the east of the central grave contained a handful of burnt bone fragments, the total weight of which after washing and drying was only 60 gm. The fragments were all less than 30 mm. long and very few were identifiable. These were however, fragments of rib, facial bones, vault and part of a ball and socket terminal, together with one tooth root. The bones were in much the same state and condition as those from the central grave deposit and could possibly belong to that. No conclusion as to sex, age, etc. could be inferred from the sample beyond the observation that the tooth root, probably from the canine tooth was from the permanent dentition.

Conclusion

The central grave contained the burnt remains of two people. One was a robust adult male and the other a young person of about 16 years old, probably also male, There was a degree of similarity of jaw line, possibly indicating a close relationship between the two people. It appeared that the bodies had been burnt together on a single pyre and probably they were placed on top rather than beneath the body of the fire. The token sample of bone in the adjacent cremation pit may belong either to the double cremation interred here or be from some other source.

APPENDIX A

Notes on the Construction of Bronze Age Barrows recently excavated on the Yorkshire Wolds and Southern Moorlands

The comments here are based entirely on recent barrow excavations undertaken by the East Riding Archaeological Research Committee for the Department of the Environment. Earlier workers such as Greenwell and Mortimer have been ignored so as to avoid error. Several Mortimer and Greenwell barrows re-excavated by the writer prior to destruction have been found not to tally with the earlier descriptions.

From the list below it will be seen that certain patterns of construction emerge, irrespective of whether or not the barrow was surrounded by a ditch, or sited on the Moorlands or the Wolds. By structures are meant the mound, ditches and kerbs and not the features beneath the barrow. Associated with the barrows are often more than one archaeological phase.

WOLDS

Barrow	*Construction Stage and Archaeological Phase*
Cot Nab I, Bishop Wilton, E.R.	Stage I only. Inner mound of clay. Outer mound of scraped soil. No ditch.
Hollies, Kirbyunderdale, E.R.	Stage I only. Inner mound of clay. Outer mound of scraped soil. No ditch.
Sharpe Howes I, Folkton, E.R.	Stage I only. Inner mound of clay. Outer mound of scraped soil. No ditch.
Sharpe Howes II, Folkton, E.R.	Stage I only. Mortuary house with solid walls. Four quarries. No ditch.
Sharpe Howes III, Folkton, E.R.	Stage I only. Central cairn of flint. Outer mound of scraped soil. Ditch.
Willie Howe, Cowlam, E.R.	Stage I and II at least. Mound destroyed. Double ditch system, one much later than the other. Phase I and II.
Octon I, Octon, E.R.	Stage I and II. Inner mound of chalk separated in time from capping of marl. Phase I, II and III. Circular ditch.
Bording Dale I, Folkton, E.R.	Stage I. Central cairn of flint. Outer mound of scraped soil. Ditch. Phase I, II and III.
Cottam I, Langtoft, E.R.	Stage I, Inner mound of marl. Thin outer covering of chalk. Ditch. Later Capping mound of marl and outer ditch. Phase I and II.
Cottam II, Langtoft, E.R.	Stage I only. Mound destroyed. Ditch.
Cottam III, Langtoft, E.R.	Stage 1 only. Mound destroyed. Ditch.

THE MOORS

Barrow	*Construction Stage and Archaeological Phase*
Hutton Buscel I, Hutton Buscel, N.R.	Stage I only. Inner mound of turf and silty clay. Outer of scraped soil. No ditch. Phase I and II.
Hutton Buscel II, Hutton Buscel, N.R.	Stage I only. Inner mound of turf and silty clay. Outer of scraped soil. No ditch. Phase I, II and III.
Sawdon Moor I, Brompton, N.R.	Stages I and II. Inner mound of sand. Capping mound of sand. Stage II mound of sand. Phase I and II. No ditch.
Sawdon Moor II, Brompton, N.R.	Stage I and II. One mound of sand only. Stage II mound of sand. Phases I and II. Ditch.
Wykeham Barrow I, Hutton Buscel, N.R.	Stage I and II. Cairn of sandstone covered by scraped silty soil. Stage II capping of silt. Phases I, II and III. No ditch.
Whitegrounds, Burythorpe, E.R.	Stage I Final Neolithic only. Neolithic cairn used as inner mound. Outer of scraped soil. No ditch.

It became apparent while examining the data from barrows excavated by the writer since 1965 that they had several structural features in common. Thirteen out of eigthteen Bronze Age round barrows had a well-defined inner mound, or cairn with a capping mound constructed on top of it during a single stage of building activity. This capping must not be confused with secondary activity and the enlarging of the primary mound by additional material. Of the six remaining barrows, four may well have had the normal inner and capping mound, but severe plough damage had completely removed all the mound body. Two of the twelve differed slightly from normal. The Whitegrounds, Burythorpe barrow builders had used a neolithic cairn as the inner mound inserting a single inhumation into the neolithic structure, surrounding the cairn with a massive kerb and erecting a large capping mound of scraped-up soil over the top. At Octon Wold the inner mound of chalk rubble from the 70 ft. diameter ditch was left uncovered for some time while burials were inserted through the mound into the shaft graves, or beside them. A large capping mound of pure brown marl was built over the inner mound to the edge of the ditch. These mounds differing from the other barrows in some respects, they do belong to the inner and outer mound group. While the inner mounds remain circa 12 to 35 ft. in diameter, according to the barrow size the capping mound is sometimes fairly thin. At Cottam I the outer envelope of chalk from the first stage ditch was only 6 in. to 1 ft. in thickness, but was securely rammed into the inner mound of marl. This method of construction seems to be independent of whether or not the barrow was ditchless, or there were kerbs, post circles or gulleys within it.

Inner Mound Material

On the Wolds, within reach of the Vale of York, Holderness or the Vale of Pickering the inner mound usually consists or blue or grey clay from the valley below, which often contains iron salts. The effect of this is dealt with in Appendix B. At Sharpe Howes I no less than 300 tons of clay was carried 2 miles from the Vale of Pickering up a steep hill 400 ft. in height. Fairly pure marl, flint blocks or quarried chalk were otherwise used. On the Moors, turf, sand or sandstone blocks were utilized in that order and capped with scraped up soil and subsoil.

Post Circles and Stake Rings

Definite post circles were located in three of the barrows excavated since 1965 on the Wolds. Two of them had the ring of post holes round the centre, these being Octon Wold I and Garton Slack I. The third, Cottam I, had a double circle of stake holes on the outer edge of the primary chalk capping mound. In this case the stakes had been driven through the chalk capping into the marl inner mound beneath. This method of driving in the stakes may also have been used at Octon Wold. The Garton Slack barrow must have had heavier timbers as post holes circa 12-18 in. deep had been dug in the gravel.

Kerbs

Some of the Wold barrows had circles of stones round or within the primary or secondary mounds. Sharpe Howes II was originally constructed with walls within the barrow as part of a mortuary enclosure. Of the Moorland barrows, this includes the Whitegrounds, Burythorpe mound, four had kerbs, one, Wykeham I, may have had one and another, Hutton Buscel I was entirely without. In one case, Hutton Buscel II, the kerb had been exposed for sometime before being swamped by slip from the outer capping mound of sand.

Circular Walls

In one case only, Sharpes Howes II, was there any trace of walls within the barrow. From Greenwell's notes of the 19th century excavation and the excavation of 1967 it is clear there was an inner circular wall around the central rock cut grave. Surrounding this was an outer wall with a rubble core encircling the inner wall and an incurved entrance. Chalk to build these walls had come from four *c.* 20 ft. by 30 ft. and 7 ft. deep quarries on the north, south, east and west of the barrow.

Enlarged Barrows

Three barrows, Cottam I, Wykeham I and Willie Howe, Cowlam had undeniable evidence of enlargement. Wykeham barrow was enlarged to cover a cremation area and

Willie Howe was enlarged at a considerable period after the primary mound was completed and the ditch re-cut much further out. It is suggested that this enlargement was associated with a burial or cremation in the upper part of the mound destroyed by ploughing prior to evacation. Cottam I was enlarged and an outer ditch dug in activity connected with three unurned cremations. These enlargements of the barrows of Cottom and Wykeham were clear to see as additions of the primary stage inner and capping mound system. Octon Wold I was not a true enlargement. The time lapse between the inner and capping mound being caused through, it is suggested, a deliberate delay whilst further burials were inserted in the shaft graves and around them.

APPENDIX B

Many barrows on the Yorkshire Wolds have an inner mound of clay carried from Holderness, the Vale of York and the Vale of Pickering. This clay normally contains ferrous salts in suspension which are carried downwards through the clay body by rainwater to the old land surface beneath the barrow. When this level is of marl and has been paddled and compacted the deposits in the clay form a pan line very much like those in moorland soils. This pan may only take the form of a russet stain, i.e. Sharpe Howes, Barrow I, or can be hard and concreted like the surface beneath Cot Nab I barrow. In this case, large fragments of pot resting on the old land surface were cemented to the clay inner mound by the hard pan.

When the clay mound is removed from the marl-type surface of the old turf line the area has the appearance of having been burnt, which can be misleading. The russet and black surface is in fact caused by the pan and nothing more.

WYKEHAM FOREST

ABSTRACT

The Wykeham report covers the excavation of a small two constructional stage, ditchless round barrow with remnants of a kerb. Stage I consisted of an outer mound of silty soil and subsoil covering a partly robbed central cairn (Plate 9) of water-eroded sandstone blocks. This mound was covered by the Stage II soil capping, which was intended to cover a cremation pit just outside the primary mound on the eastern side. Beneath the cairn were two collared and one barrel-shaped urns surrounding the former position of a large urn removed by earlier excavators. On the south-western side of the Stage I and II mounds were hollows cut through the barrow containing incomplete collared urns. At the edge of the Stage I barrow, due east of the cairn and cut into the old land surface was a small cremation pit covered by the remains of burnt timber, charcoal and reddened soil buried beneath the second stage capping of the barrow. Radiocarbon determination of the charcoal from the bottom of this pit gives a date B.P. 3,485±90.

I

THE SITE, ITS TOPOGRAPHY AND GEOLOGY

The site, now destroyed, was located in Wykeham forest, (Figs. 1 and 14). dug and planted with Sitka spruce in 1927 by the Forestry Commissioners, and lies in the Parish of Hutton Buscel 5 miles from the coast of the North Sea near Scarborough, North Riding of Yorkshire.

The presence of the barrow at N.G.R. SE 957876 in the immediate path of a forest ride being cut through part of Wykeham Forest was brought to the notice of the Inspectorate of Ancient Monuments in the late winter of 1967 by Mr. J. Bartlett, Forestry

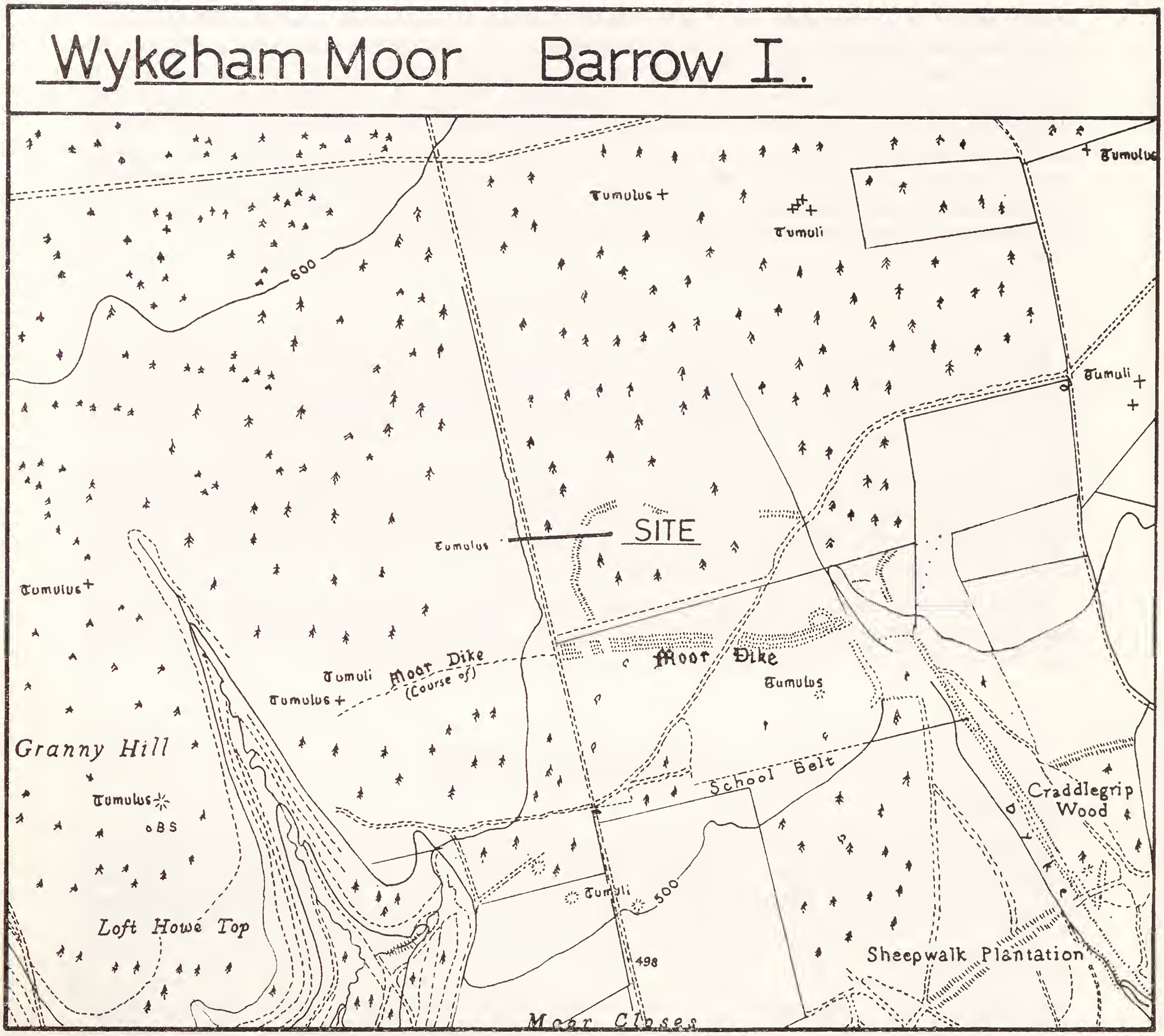

Fig. 14. Map: Wykeham Moor, Wykeham Forest and Hutton Buscel Moor.

Officer, Wykeham, on behalf of the Forestry Commissioners. Work on the ride was halted in order to enable excavation to take place.[20]

[20] Any attempt to divert the ride at this stage would have caused a wide opening in the forest which would have acted as a ‘funnel’ during easterly gales and brought down a considerable number of trees. This had already occurred in Dalby Forest in similar circumstances. When excavation commenced forest coverage had already been cleared in preparation for the construction of the road, but bulldozing was halted by the driver, Mr. P. Calvert, two yards from the barrow, who requested permission from the Wykeham Forest office to cease work to avoid damage to the mound. This was granted and action taken by the Forestry Officer to arrange for the excavation of the site, and every effort was made by the Foresty Commission staff to assist the excavators. The pollen analysis of the soil samples obtained from the barrow was kindly undertaken by Professor G. W. Dimbleby. The drawings of the sections and plans were reproduced from the field drawings by D. Neal and other illustrators for the Inspectorate of Ancient Monuments. In addition, the drawings of the pottery, and the schematic section of the barrow were drawn by Mr. G. E. Pallant-Sidaway. Considerable assistance was provided by the staff of the Inspectorate during the excavation and afterwards; in this respect special mention must be made of R. Robertson-Mackay, J. R. C. Hamilton and J. Musty. The excavated material has been presented by Viscount Downe to Scarborough Museum where it is now exhibited. The excavation was directed by T. C. M. and A. Brewster, assisted by the late F. G. Brook, Site Assistants T. Hall, D. Kidd, R. Hall and workmen; including the late R. Peckitt. Volunteers included Guy Wilson and S. Cheeseman.

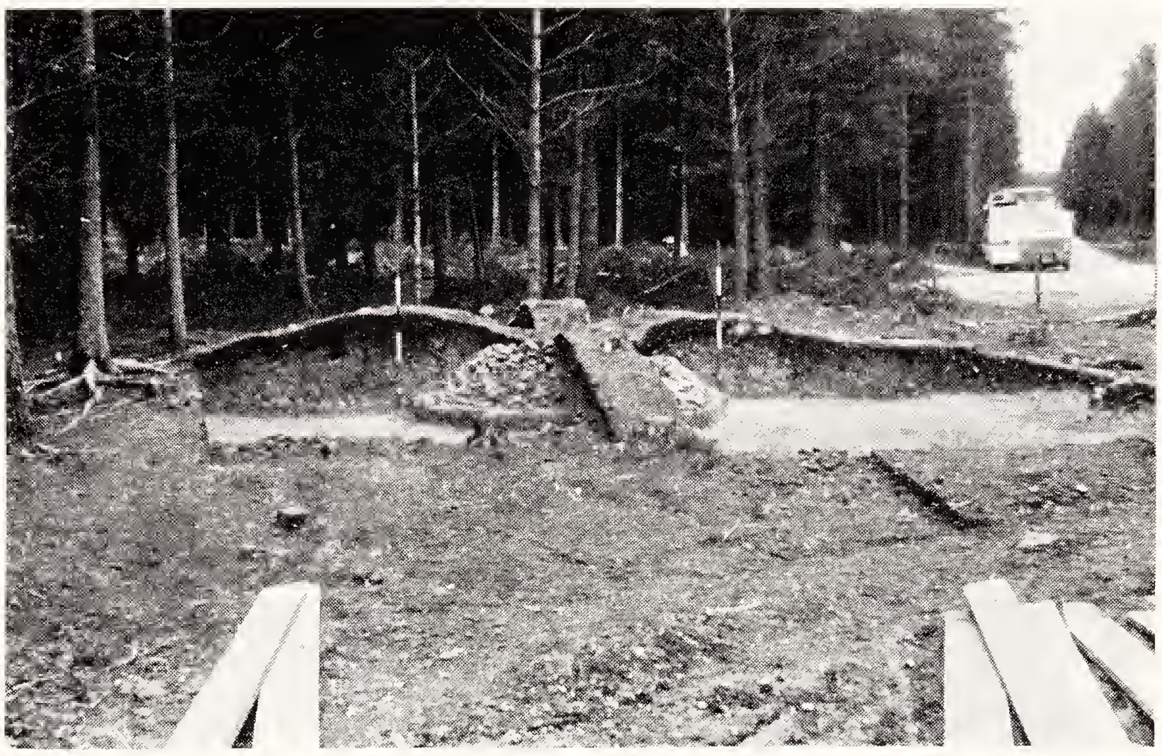

PLATE 9. View of Site from the west. Scale in feet.

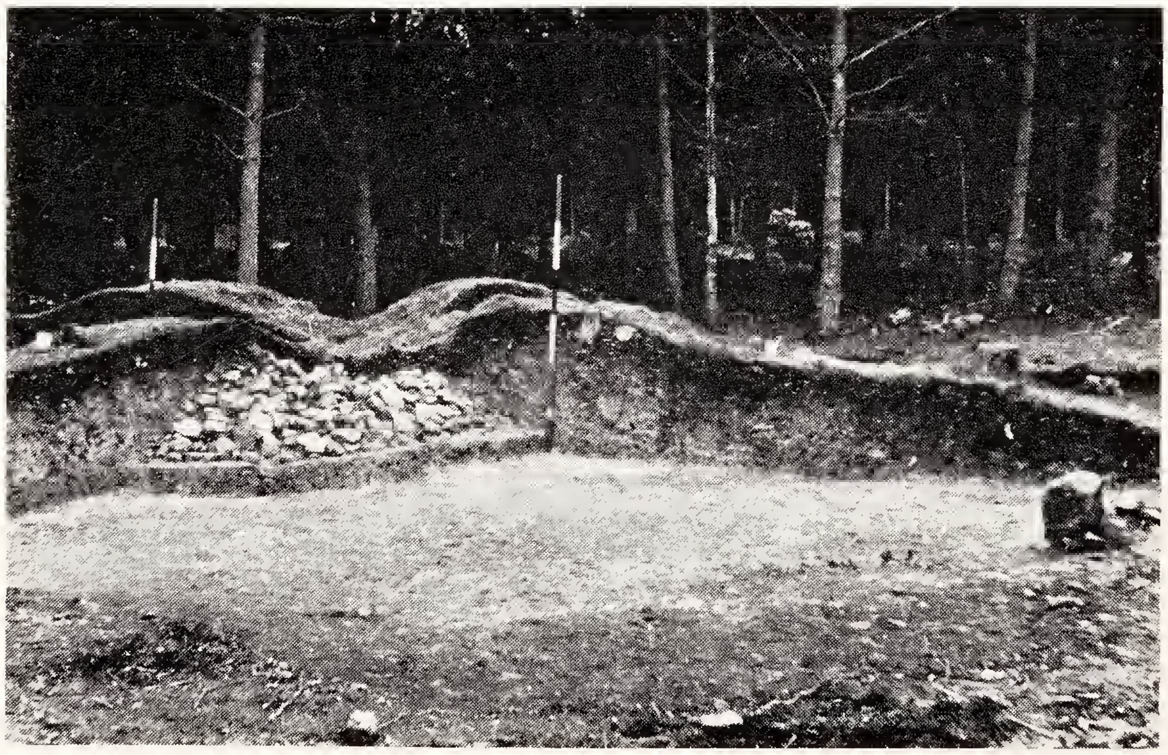

PLATE 10. View of north-south baulk, cairn and kerbstone from south-west. Quadrant C. Scale in feet.

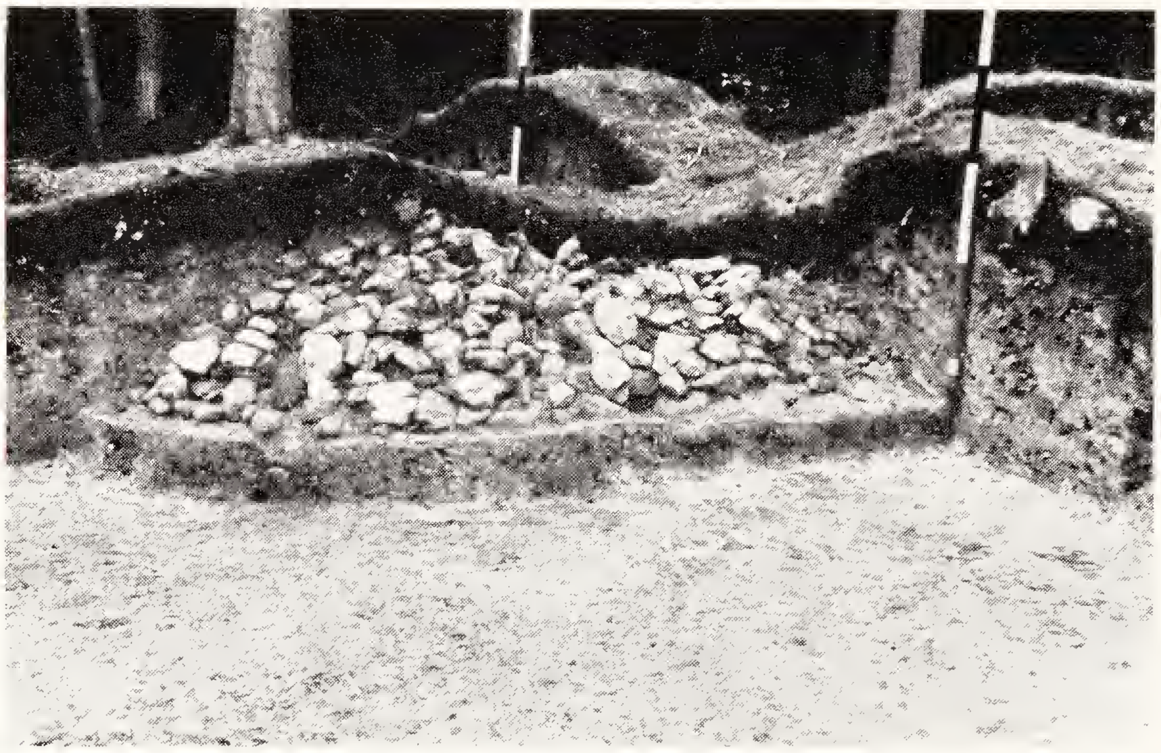

Plate 11. Detail of "robber hole", cairn and old land surface from south-west. Quadrant C. Scale in feet.

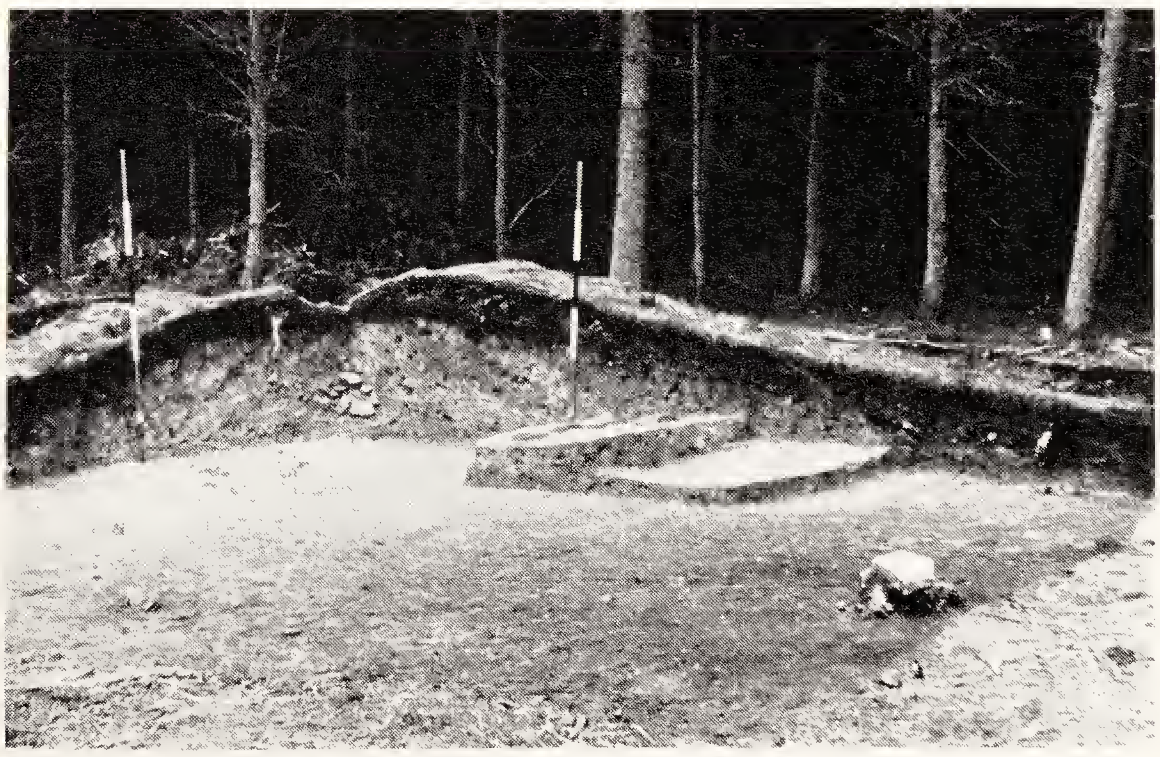

Plate 12. East-west baulk, part of cairn, cremation pit and one kerbstone from south-east. Scale in feet.

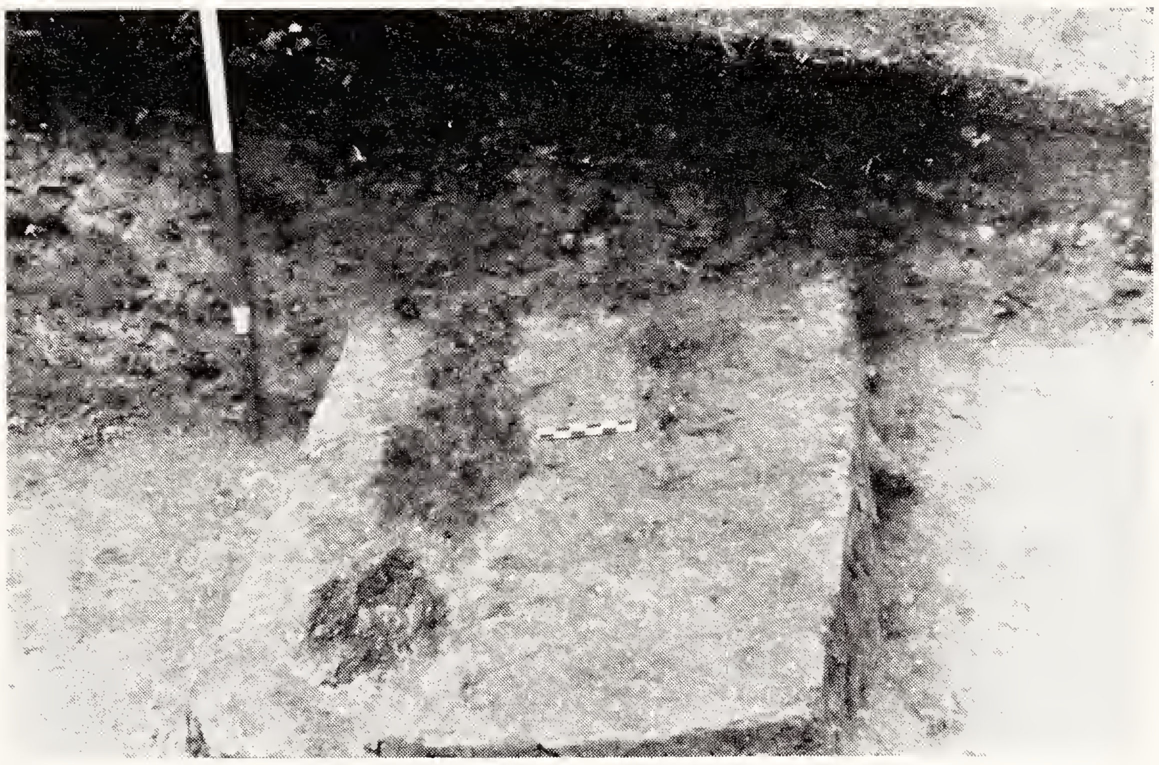

Plate 13. Remains of oak logs above cremation pit. View from south. Quadrant B. Scale in feet.

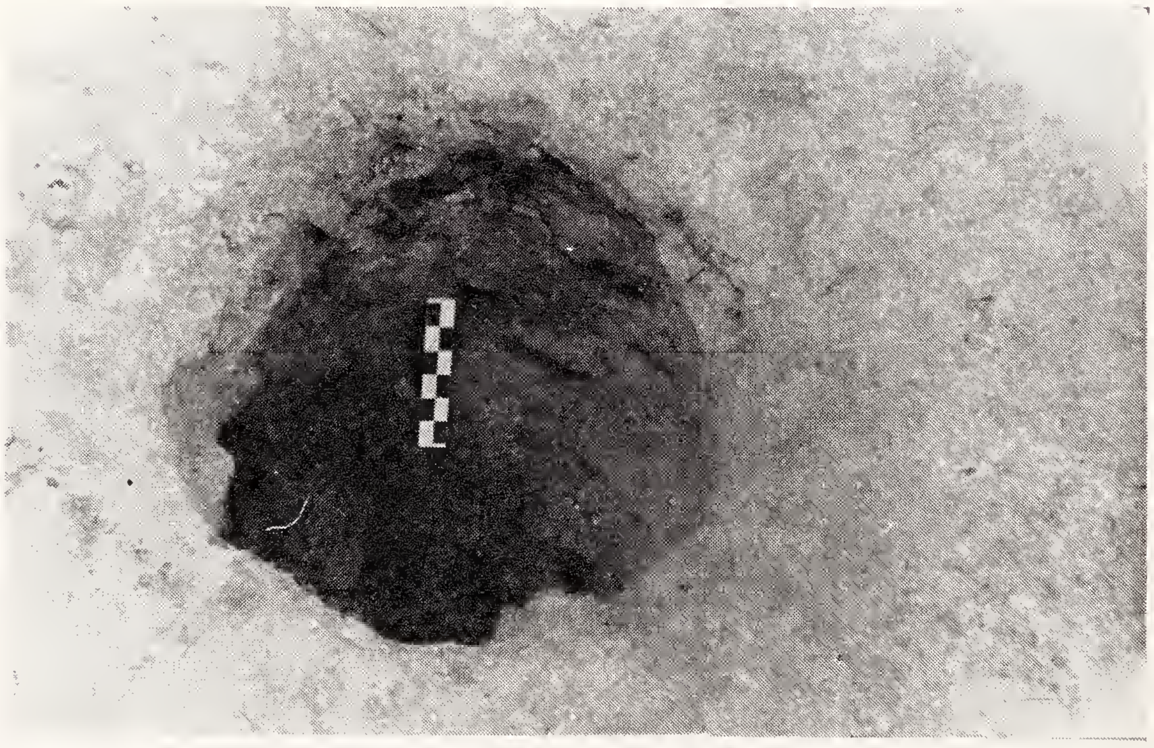

Plate 14. Empty cremation pit from south. Quadrant B. Scale in inches.

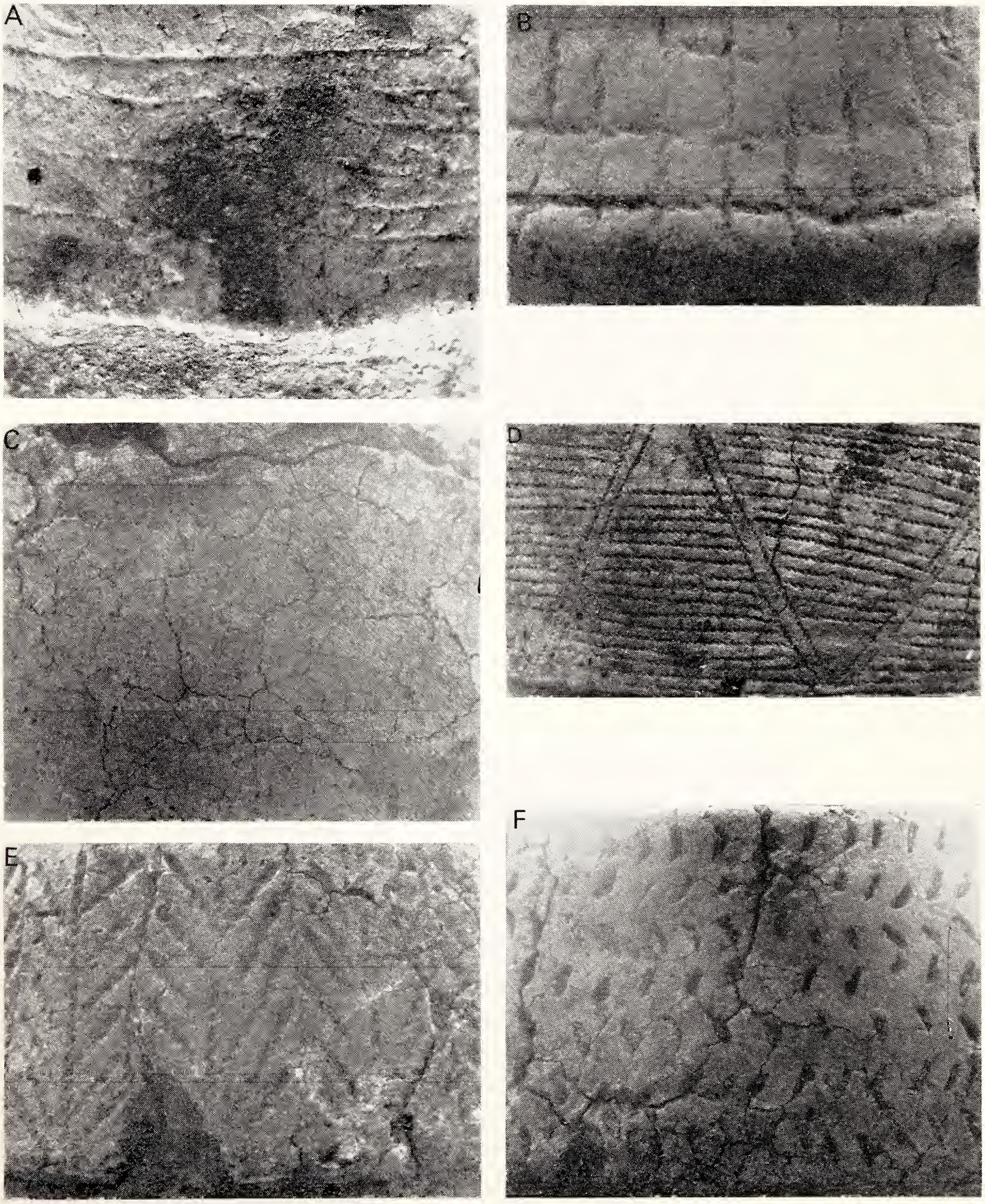

Plate 15. Fig. A: Urn 5. Fig. B: Urn 6. Fig. C: Urn 1. Fig. D: Urn 2. Fig. E: Urn 3. Fig. F: Urn 4.

The barrow rests on the sandy silty soil overlapping the Jurassic sandstone deposits of the southern edge of the moorlands at an altitude of 563 ft. O.D. Newlyn; this level being that of the central, southern, datum peg of the excavation grid.

The mound is situated on a high plateau bounded to the north and northeast by the precipitous slopes of Troutsdale and Langdale. Westwards and northwards the moor extends for miles, bisected in places by dales and ravines which run southwards from the moorland scarp. Towards the east the plateau slowly falls away across West Ayton Moor towards the deep Langdale valley through which the Derwent flows southwards. This shallow incline of the moor is also a feature of the terrain to the south and south-east of the barrow where the moorlands, now chiefly under cultivation, descend towards the steep slopes of Forge Valley, a continuation of Langdale, and the shallow sides of the Vale of Pickering near West Ayton, Hutton Buscel and Wykeham.

Immediately to the east of the site, Fig. 14, beside the old moorland road, is a narrow and ancient watercourse which flows in wet periods and during the winter months south-westwards to Fox Head. There the stream joins the Foss Beck which unites with

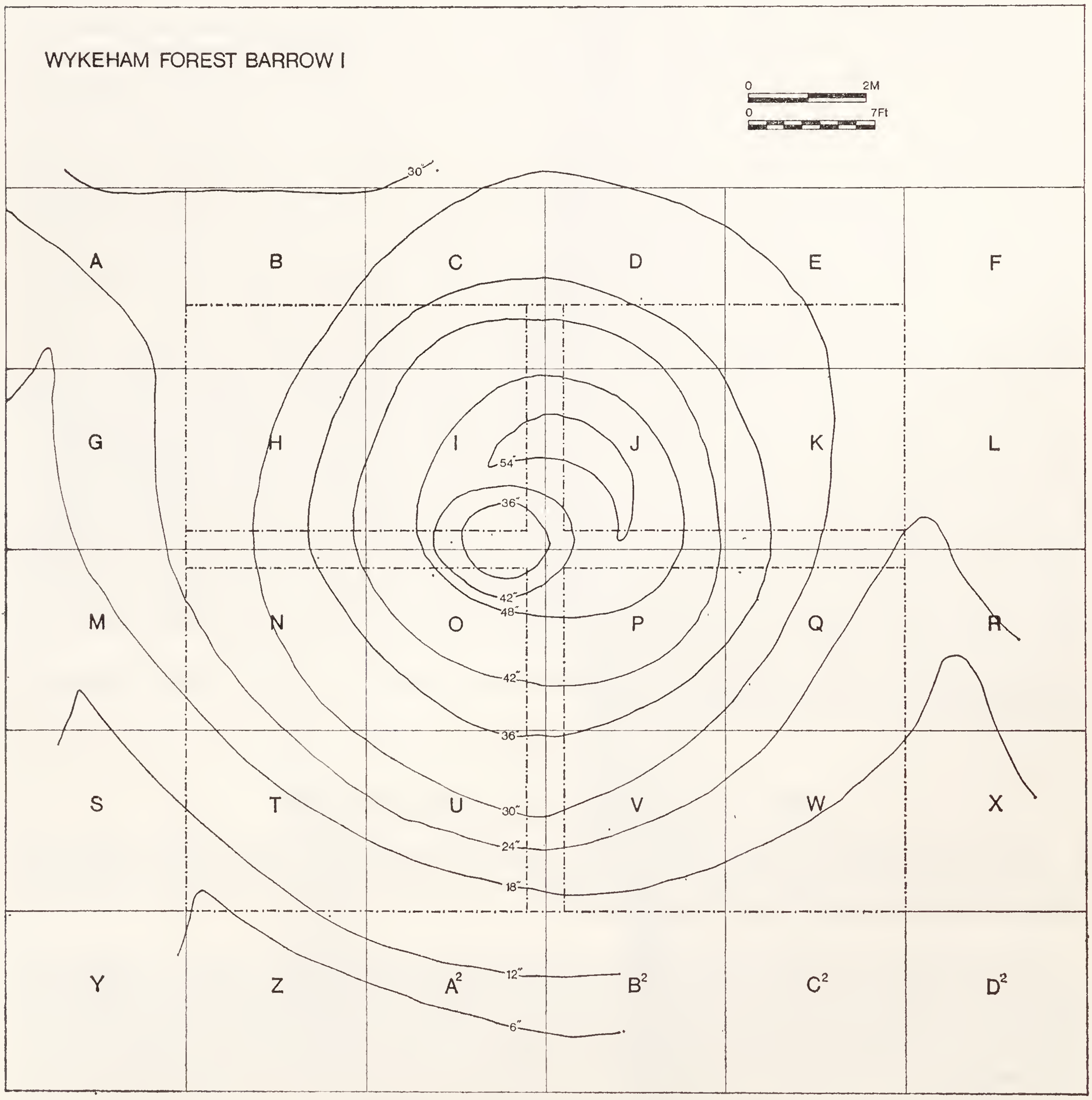

Fig. 15. Contour plan of barrow.

another moorland rill at Tommy Gill in Bee Dale close to Basking Howe Bank. Such streams as the above would supply stock with water during most of the year under present conditions, or during wetter climatic phases. Grazing near the barrow is suggested during the Final Neolithic and Early Bronze Age by the pre-barrow pollen count.

Nearby Barrows, Earthworks and Previous Excavations in the Area

The Wykeham Moor barrow is one of many scattered in small groups, or individually on Wykeham, Sawdon, Hutton Buscel and West Ayton Moors, the largest group being those located at Coomb Hill, a mile to the north of Barrow I, close to a square earthwork. Square enclosures, enclosing barrows, or on their own are a feature of the area. Greenwell mentions this aspect in his report on the Hutton Buscel barrows in 1877. During the excavation of Hutton Buscel Barrow II in 1965, a narrow, shallow ditch filled with peaty soil ran straight past the western side of the mound. It may well have been part of a square enclosure surrounding the barrow, but it was not possible to check its course due to crops. The Hutton Buscel ditch did not appear to indicate any great age in its section and it may well be the square enclosures on Hutton Buscel and Sawdon Moor are medieval, or later.

From the recent excavations at Hutton Buscel and Wykeham and those published by Greenwell of his nineteenth century excavations, it would appear that nearby there is a complete lack of Beakers associated with burials. Barrow CLII excavated by Greenwell produced a food-vessel and bronze dagger, but no inhumation or cremation. Hutton Buscel, Barrow II, excavated in 1965 proved to be a complex Food-vessel barrow with ornamented kerbs. Greenwell's Barrow CLIV had a cremation associated with the remains of a food-vessel, probably used as an urn. The remainder of the excavated barrows in the Wykeham Forest area, six in all, produced urns and cremations directly associated with them. Some of the barrows had multiple-urn burials. None of the barrows contained a cairn as in the case of the Wykeham barrow, neither did any of the mounds produce urns not directly containing, or associated with cremated bone. It would appear the Wykeham mound's structure and burial complex cannot be matched in the immediate vicinity at the present moment, but further excavation may prove informative.

As already mentioned, Greenwell excavated in the immediate vicinity in the latter half of the 19th century and published the information and some of the finds. The present excavator undertook the excavation of two barrows to the south of the forest in 1961, 1962 and 1965. Greenwell reports that many of the barrows had been broken into prior to his own excavations. Some of this work may well be that of John Tisseman, a Scarborough antiquarian, who dug several barrows in the Scarborough area in the mid-nineteenth century. Elgee mentions him in 1930 and there is a reference in *Archaeologia* 1844 to his work in a note sent by Jabez Allies. Much of Tisseman's material, if not all, was deposited in Scarborough Museum. It might well be that the Wykeham urn is in the present museum's collection.

In the present report the linear earthworks not actually connected with the barrow complex have not been discussed.

II

THE EXCAVATION OF THE BARROW

Due to the relatively small size of the barrow, its rough surface and the presence of tree stumps on the sides, (Plate 9), the barrow was excavated by the simple quadrant method with 2 ft. wide central cross baulks.[21]

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[21] The excavators' 10 ft. grid was retained for drawing and find-recording purposes. All plans and sections were drawn to scale, 1 : 12, with the aid of gridded drawing frames and fixed vertical and horizontal controls in the case of sections. Colour and monochrome photographs were taken of all aspects of the excavation. All surveying and levelling was undertaken by theodolite. The excavation was undertaken by the East Riding Archaeological Research Committee for the Department of the Environment.

Samples of the old and modern turf soils were obtained for soil analysis, but were finally used for pollen determination.

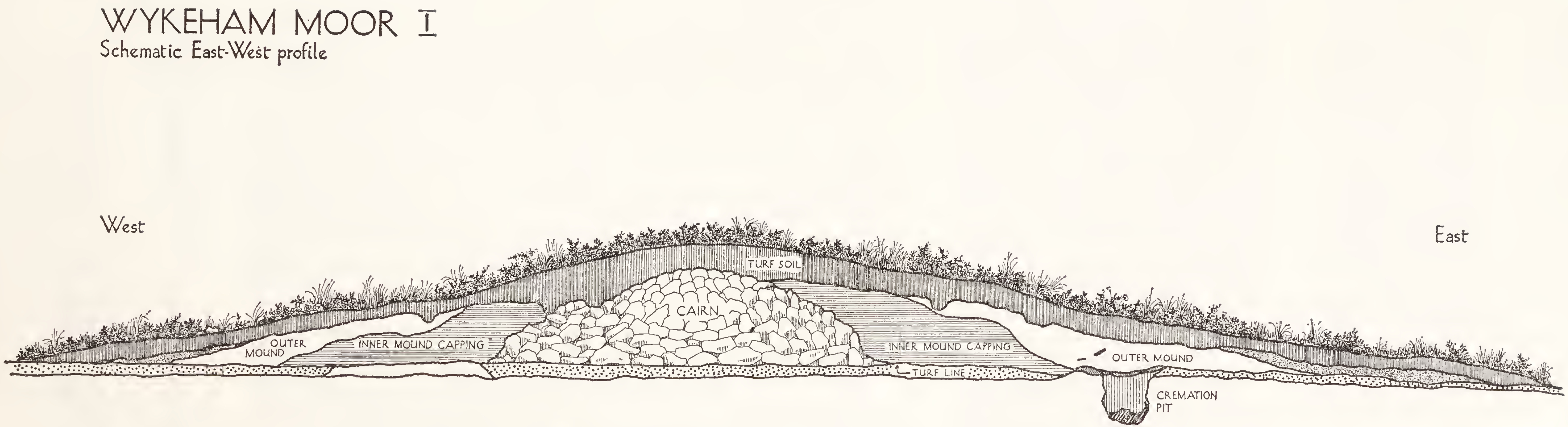

Fig. 16. Schematic reconstruction of barrow; prior to the 19th century.

General Description and Erosion

The barrow was approximately 40 ft. in diameter prior to excavation (Fig. 15), with a maximum height on the central north-south axis of 2 ft. 6 in. On the east-west section just east of the centre, the mound rose to 3 ft. 3 in. above the southern datum peg. It is estimated that the original maximum height before the robber hole was dug was about 3 ft. 6 in. to 4 ft. from the southern side. Originally, as indicated by the east-west profile (Fig. 18), the barrow had been approximately 36 ft. in diameter with a probable height of 4-5 ft. when first completed (Fig. 17).

Covering the entire mound in 1967 to a depth of 4 in. in places were pine needles, which had accumulated since the trees were planted in 1927. Beneath this layer was a deposit of black peaty soil which appeared to be undisturbed except in the vicinity of the robber hole. Certainly this soil seals all the phases of barrow construction and activity including the pits containing the urns. Part of the interior of the cairn in the robbed area and the hollow left by the robbers (Plate 11) were partly filled by black peaty soil not dissimilar to the turf soil covering the barrow. This deposit is doubtless a combination of washed material from the cutting top and plant debris which would be expected to collect in such a hollow. Water washing into the robber break-in had deposited ferrous residue in the soil immediately beneath the penetration and created a clearly-defined soft pan line. The evidence for a considerable time-lapse since the disturbance further suggests a mid-nineteenth century robbing. In the section (Fig. 18), the link-up of this pan with the edges of the cutting confirms that the line does not pre-date the central disturbance.

Beneath the black soil layer and resting on the undisturbed body of the mound was a scatter of sandstone blocks from two to six inches across sparsely covering all of the barrow surface not disturbed by the robbers. It was noticed that there were traces of carbon beneath many of the stones which might suggest trapped vegetation. These stones could have been used as weights to anchor turf and plants in an attempt to re-establish vegetation on the barrow surface after its final construction in the Bronze Age. Exposed sloping surfaces of silty subsoil on the moorlands tend to erode very rapidly. This is occurring at the present time on the Stony Marl Howes barrows south of Robin Hoods Bay on Stony Marl Moor where severe burning of vegetation in recent years has loosened the surface of the mounds and caused erosion by frost, rain and wind action. The pollen count for the old land surface beneath the barrow suggests pastoral farming in the immediate vicinity at the time when the barrow was built (see pp 94–5). If stock were to have grazed over the mound trampling would have further accelerated the process unless vegetation was re-established. Flint equipment was recovered from the top of the mound beneath the black silty soil in the same horizon as the stones, suggesting they were contemporary. It could be argued that the stones had come from an upper part of the mound, the soil of which was eroding away by the action of water, frost and wind, leaving the blocks behind. It is considered that this suggestion is untenable, for stones of this size do not occur in the rest of the Stage I and II capping mounds; neither are they found in any quantity amongst the soil and subsoil of the surrounding land surface when the mound body must have been scraped up. It is therefore suggested that the barrow surface was planted with vegetation held down by small boulders and stones to encourage cover to grow in order to prevent reduction of the mound by erosion. This would subsequently permit humus to accumulate on top of the mound body which survived undamaged until 1967.

Construction Stages and Archaeological Phases

Stage I	*Phase* 1
Construction of Cairn and Capping Mound and digging of Urn Pits beneath Cairn.	Burial of Central Urn and Satellite Urns beneath Cairn.

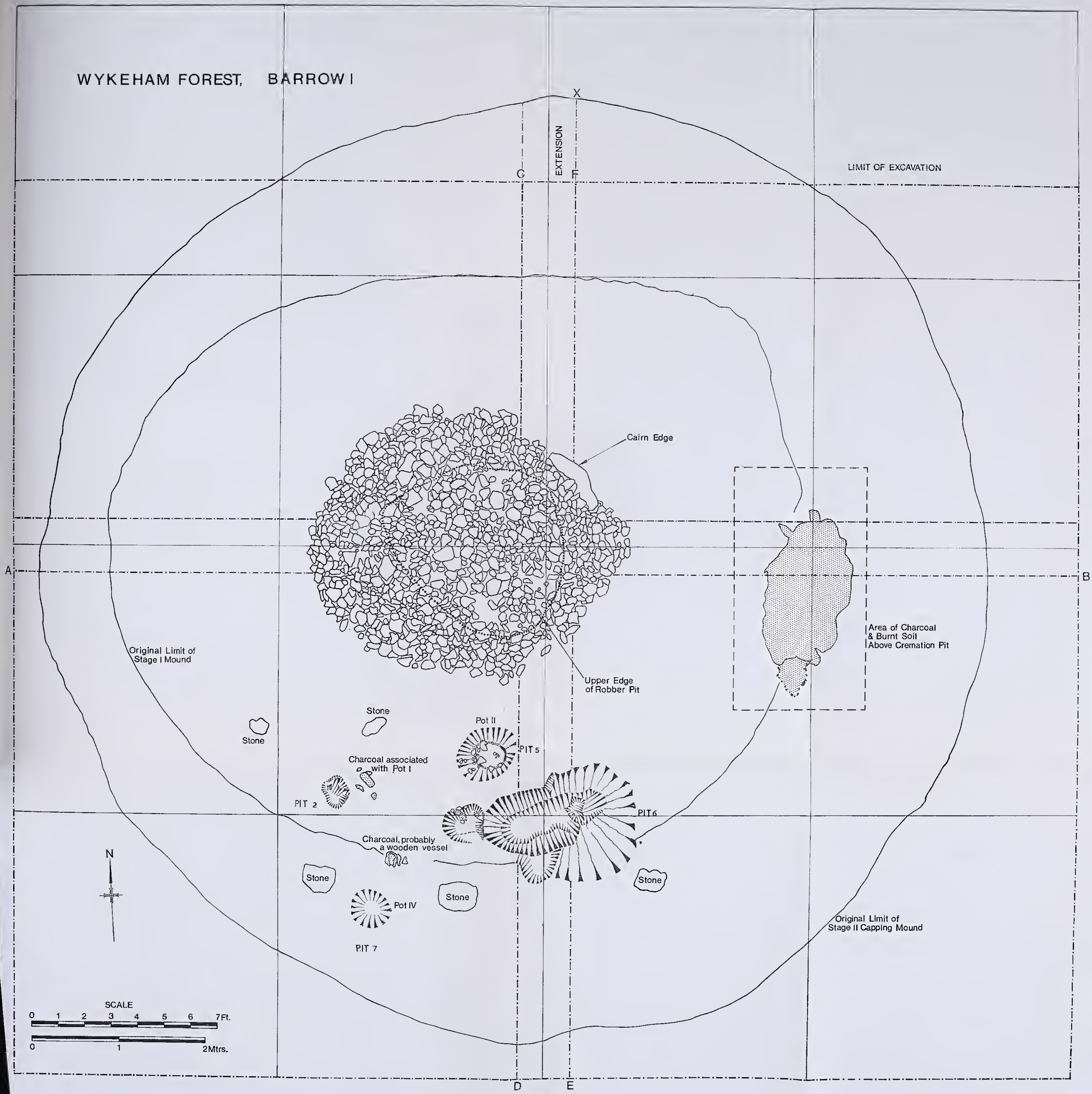
WYKEHAM FOREST, BARROW I
X
EXTENSION
C
F
LIMIT OF EXCAVATION
Cairn Edge
A
B
Area of Charcoal & Burnt Soil Above Cremation Pit
Original Limit of Stage I Mound
Upper Edge of Robber Pit
Stone
Stone
Pot II
PIT 5
Charcoal associated with Pot I
PIT 2
PIT 6
Charcoal, probably a wooden vessel
N
Stone
Stone
Stone
Pot IV
PIT 7
Original Limit of Stage II Capping Mound
SCALE
0 1 2 3 4 5 6 7Ft.
0 1 2Mtrs.
D
E

Fig. 17.

Stage II	*Phase* 2
Cutting of Cremation Pit and building of Outer Capping Mound over cremation pit and Stage I barrow.	Cremation of human bones near and in small cremation pit afterwards sealed by ash and timber. Flint equipment on barrow surface.
	Phase 3
	Burial of empty urns in pits cut into Stage I and II capping mounds.

Structurally the barrow consists of three parts, i.e., the inner mound in the form of a cairn built of sandstone slabs, some of which show traces of reddening by fire, secondly a first-stage capping mound consisting of yellow silty subsoil with traces of turf soil scraped up from around the barrow, The final, Stage II, construction was the building of a scraped-up soil and subsoil capping mound over both the cremation pit dug outside the Stage I mound and the first phase burying both completely.

This system of inner and capping mound contemporary in time and construction is a normal feature of many of the East Yorkshire barrows recently excavated. Two, or three-phase enlarged barrows have occurred, but the addition, or additions are clearly defined at Wykeham.[22] The Wykeham barrow has two constructural stages, but there appear to be three phases of activity. Their phases are indicated above and described in detail below. Whereas Phases 1 to 3 must be in chronological order they may be close together in time, possibly only months apart. So close were Stages I and II there was no indication of wash, or turf formation on the sides of the Stage I capping mound prior to the cutting of the cremation pit and its sealing by the Stage II, Phase 2 capping mound. In the sections there are no indications of turf soil formation on the surface of the Stage I outer capping mound or at its base. This seems to indicate that only a short time elapsed between the building of the Phase I barrow and its burial under the Stage II capping mound. There is no evidence for a ditch in any form although trenches were driven out to the south and west to pick out any trench cuttings. Several large stones were partly disturbed near the outer fringe of the mound. It is thought there might be the remains of a kerb.

THE MAIN QUADRANT BAULK SECTIONS

East-West (South facing) Section (Fig. 18: A-B Plates 10 and 12)

The profile was drawn from the section exposed in the east-west cross baulk separating Quadrants A and B and C and D, and cuts across the cremation pit, the cairn and the outer capping mound of Stage II. The section was completed by exposing the cairn to the natural and sectioning the remaining part of the north-south cross baulk to complete the run.[23]

The east-west breadth of the cairn was just under 11 feet and its sides were fairly steep. The robber hole reached the subsoil in the centre and some dark peaty soil had washed into it. Above this deposit the hole was filled with black spongy peaty soil capped by pine needles. On the east and west side the cairn rested upon fawn grey silty soil immediately above the yellow silty subsoil. As this layer is the same as the turf-soil elsewhere beneath the barrow, it must represent the remains of a partly pared-away top soil. Capping the western side of the cairn was a deposit of light grey silty soil with traces of yellow subsoil, obviously scraped material. Beyond this layer, to the west, was a lens of yellow subsoil with traces of grey silt. This layer, which overlaps the earlier deposit, represents the Stage II capping mound. The thin layer of dull fawn silty soil covering the Stage II material near the bottom of the mound represents primary slip and eroded soil from the barrow side. The section was extended westward for 15 ft., but no trace of a ditch was located. The section as a whole suggests that the site had been partly levelled, with the removal of small heaps of soil beneath tufts of turf and shrubs.

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[22] See Appendix A. Irton Moor, Barrow I, pp. 72-3.

[23] All stones of the cairn that extended into the profile were drawn. The apparent gaps are due to blocks being further in the face and leaving a hole therefore in the drawing. No blocks were projected in any way.

On the eastern side the cairn was covered by a deposit of light grey humus capped by a zone of dull fawn grey soil representing scrape from the area beyond the barrow. Just under 9 ft. west of the eastern end of the profile and exposed in the face was a steep-sided pit (Plates 13 and 14) cut in the natural 1 ft. 8 in. deep and 1 ft. 6 in. in diameter containing cremated human bone, charcoal, the charred remains of a wooden vessel and a fragment of bronze. The sides (Figs. 21 and 22) show considerable signs of burning and the pit was covered with layers of burnt soil and remains of charred timbers were indicated in the section. Apparently the surface soil was scraped up and deposited on the eastern side before the subsoil and turf capping mound of Stage II completely covered the pit and its cover. It will be observed that the debris associated with the cremation, including carbonised timber, was heaped on the centre of the pit and to the west on the side of the Stage I barrow.

Indicated in the profile are the positions of the samples used for pollen analysis and radio-carbon determination. On the extreme eastern side of the section the fawn turf soil slip of the mound extends as on the western side, beyond and covering the mound body.

North-South (West facing) Section (Fig. 18, C – D, Plates 9 and 10)

Due to the presence of trees, which could not be felled, it was not possible to excavate some of the northern part of the quadrant: hence the truncated section. In the extreme northern end of the section part of the original turf line remained intact. The Stage I junction of the turf line and the Stage II mound is clearly defined. Here the Stage I barrow capping consists of light grey soil covered by top-soil scrape: somewhat lighter in colour than the Stage II silty grey soil capping. A lens of yellow soil scrape appears on the exteme left. Piled against the side of the cairn was a lens of light grey silty soil with white traces. Covering the entire section as elsewhere was the normal layer of black peaty soil. This in turn was marked by the stone and soil debris from the robber hole to the north of the centre. Overall, as elsewhere, was a 4-in. thick bed of pine needles.

The cairn in this part of the profile showed considerable evidence of penetrating the old land surface (Plate 11). Beneath the cairn centre were traces of a fine russet pan line where water had washed down ferrous deposits after the cairn was robbed. This suggests some time had elapsed after the robbing had taken place. To the south of the centre the Stage I and II demarcation line was clearly defined, but marked to a certain extent by

Wykeham Moor. Barrow I (Fig. 18 *opposite*).

Soil Key

1. Fawn to grey silty prehistoric turf line.
2. Yellow sandy subsoil.
3. Light to dull grey silty soil – slip from mound.
4. Grey silty soil.
5. Grey silty soil with yellow subsoil mixture.
6. Black peaty soil with purple tones.
7. Fawn to grey silty soil.
8. Light brown loamy soil.
9. Dull fawn silty soil with grey tones.
10. Black and grey soil mixture with stones. – 19th century disturbance.
11. Light grey to white prehistoric turf soil, with charcoal specks.
12. Turf soil scatter.
13. Light grey silty soil with white tones.
14. Grey silty soil with yellow subsoil.
15. Dull to light grey silty soil.
16. Dark grey silty soil with purple tones.
17. Black silty soil with fawn tones.
18. Loose black loamy infill.
19. Dull yellow to fawn silty soil.
20. Sitka pine needle bed.

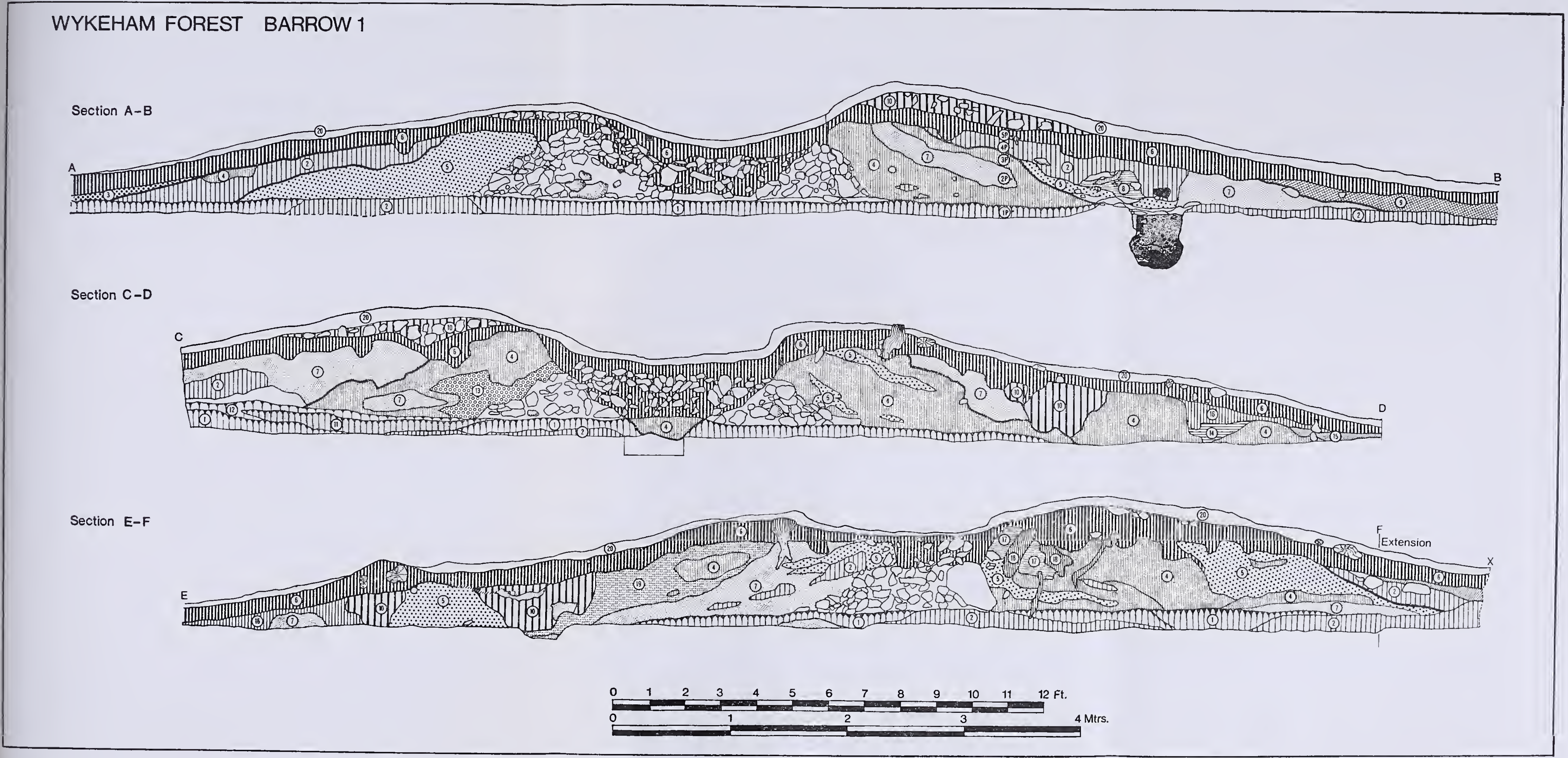


Fig. 18. Baulk profiles.

the ancient disturbance associated with the insertion of Urn 3 of Phase 3. Both capping mounds consist of light grey turf soil with varying tones. 5 ft. 6 in. from the southern datum was a deposit of dark grey soil in an irregular hollow. This may well be mound slip and scatter after the removal of a kerbstone. It is thought possible there had been a perimeter kerb in the final phase of Stage II.

North-South (East facing) Section (Fig. 18, E – F)

This side of the central cross baulk is somewhat different from the western face; hence its description and illustration. On the southern side, 5 ft. from the end, was a dip made prior to accumulation of peaty top soil, but was not connected with the dip 2 ft. away in Fig. 9. The break-in associated with Urn 2 is clearly defined. An interesting factor is the marked pan line in the top of this filled-in hollow. This feature occurs when the soil has been trampled on, or compressed on moorland, or soils containing clay and marl and covered by clay or sandy silty soils containing iron salts in suspension. The ferrous content is led down by rain or melted snow and collects on the line of paddling or compression. See Appendix B, Irton Moor, Barrow I. In this profile only the top of the cairn was damaged by robbing. An interesting feature is the large slab of stone and the subsequent steep slope of the cairn's northern side. Unlike the southern side of the section the division between the Stage I and II mound is not so clearly defined and its edge overlaps a lens of previously scraped-up soil. Furthermore the profiles of both stages show a greater variety of soil and subsoil than elsewhere on the barrow. Close to the northern side of the cairn were a series of rabbit holes filled with loose black soil. On the extreme limit of the truncated section the usual layer of grey to black silty soil, thought to be slip, occurs at the lower edge of the Stage II mound.

STRUCTURES BENEATH THE MOUND AND LOCATION OF FINDS

The Cairn (Figs. 16 – 20 Plates 9, 10 and 11)

The cairn was constructed of irregular sandstone blocks, some reddened by fire, and was erected over three shallow pits, two of which contained pots. Slightly oval in plan, the cairn's base was 13 ft. east-west and 11 ft. north-south. It had been constructed by building stones up from ground level until the urns and pits were buried completely; the last stones were placed in the centre. Except where soil from the masking mound penetrated into the upper hollows amongst the stones the cairn was filled with air spaces. In the case of the eastern pit a 'dome' of specially placed stones had been built within the cairn to protect the urns which were still standing in a cavity. This cairn erected in the centre of the barrow and masked in an envelope of silty soil and subsoil scrape had the same function as the inner mounds of clay, sand, turf or chalk chips found over the primary graves and satellite graves or allied structures in the barrows of East Yorkshire. (See Appendix A. Irton Moor, Barrow I, pp 72-3).

PITS UNDER THE CAIRN (Figs. 19 and 20)

Beneath the cairn were three pits cut into the natural surface. Two were close together, 2 ft. within the cairn on its western side. The other was located at the eastern side close to the large stone previously mentioned.

Pit I

Pits I and II, on the western side of the cairn, were only located as two faint purple to grey oval bands about 1 in. wide enclosing an area of fine fawn soil with charcoal specks. The pit was 1 ft. 5 in. wide north-west to south-east and 12 in. south-west to north-east, cut in the natural. Where excavated it was found to contain fawn to grey silty soil with specks of charcoal and red burnt soil with pockets of charcoal, black soil and red burnt soil on the southern and south-eastern sides. The average depth was 7 in. and the base width the same.

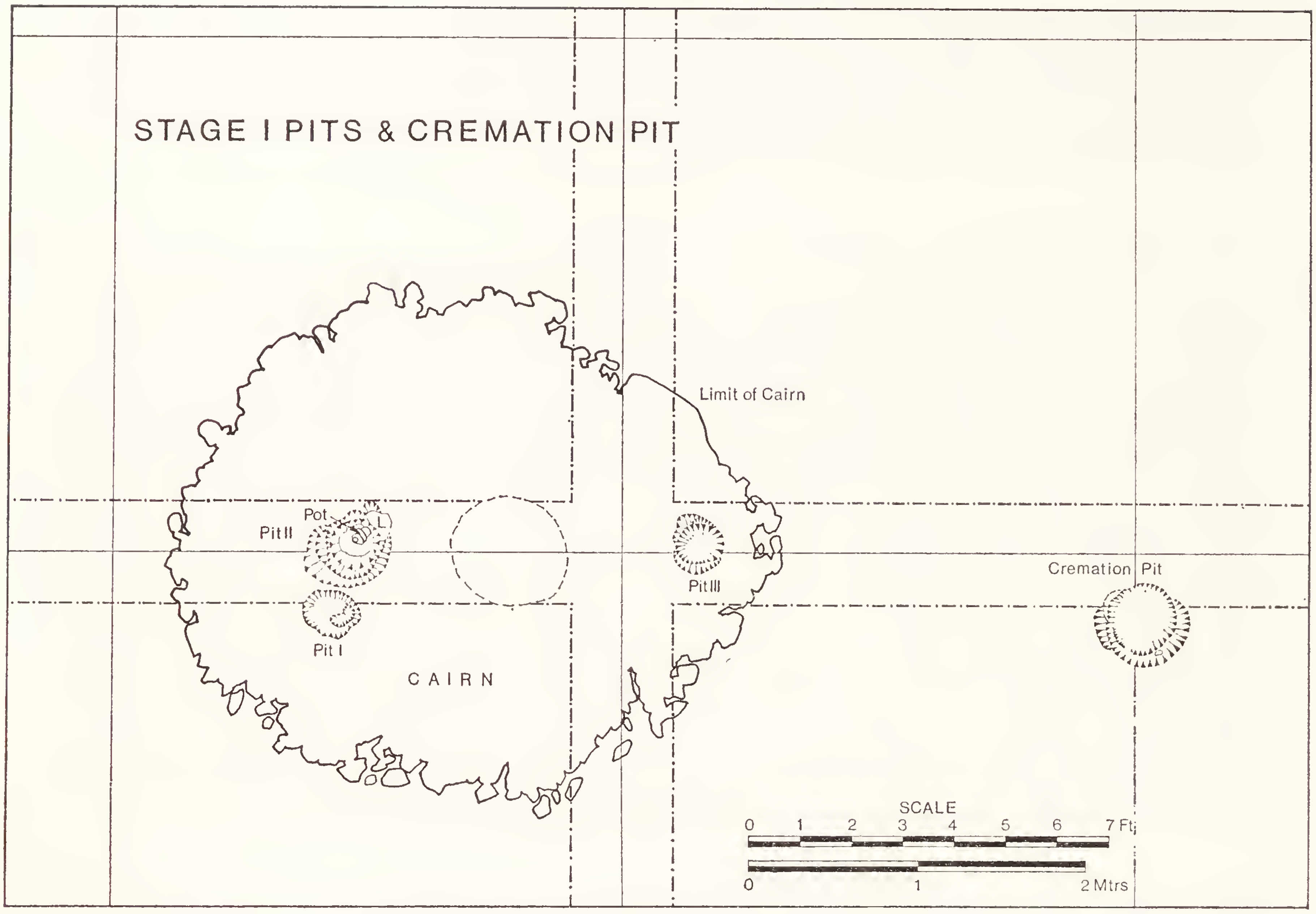


Fig. 19. Stage I Pits beneath Cairn: I, II and III

Pit II

The axis of this pit, which was also oval, ran north to south, the southern edge touching the side of Pit I. Its perimeter was marked by a 1 in. wide band of purple to grey soil about 1 ft. 8 in. by 1 ft. 3 in. in width and cut 1 ft. 1 in. deep into the natural. The upper infilling consisted of either dull fawn silty soil with pink tones of dull yellow silt, with specks of charcoal, burying a small urn. Beneath this horizon and the urn was a thick layer of charcoal covering the entire bottom of the pit. Neither of the hollows showed any evidence of burning whatsoever on the bottom or the lower part of the sides, but the upper edges of Pit I on the south-east and southern side showed signs of fire. This feature and the presence of charcoal with fire-reddened soil traces in the infill of both pits indicate some activity involving the urn, and that fire had occurred in or near the hollows prior to their sealing and the insertions of the small urn in Pit II.

Pit III

This pit at the eastern end of the cairn was apparent immediately the stone capping of the cairn was removed. The pots were not buried in the shallow pit dug in the natural, but were inverted beneath a rough dome of stone erected in the cairn to protect them, leaving the upper part of the pit and dome surrounded, like the stones of the cairn, by air. Pit III was roughly oval in plan with its axis running north-west to south-east; the north-western end tapering. Its length was 1 ft. 7 in., width 1 ft. 2 in. and maximum depth 6 in. The south-eastern part had collapsed, possibly due to its thin and rather fragile walls and slight pressure from the stones of the cairn as it and the dome stones settled in the early life of the barrow. Unlike its companion, the complete urn, the pot had stood on its base. The other stood inverted in the hollow with its base still 5 in above. the old surface. Pit III differed from the others in that its bottom was filled with charcoal and black soil mixed with small potsherds, the upper part not being filled in. Just beneath the broken pot was a lens of bright fire-reddened soil containing minute fragments of pottery.

The pits and contents must represent activity associated with the robbed inurned cremation placed beneath and in the centre of the cairn. Two fragments of this vessel remained and there were minute traces of cremated bone. In two cases fires had burned near or in the pits and in the case of Pit III the charcoal and debris associated with a fire still remained in situ at the bottom of the hollow. Part of the side were stained pink by burning. None of these urns were associated with even the minutest trace of cremated bone. This was also the case with all but one of the urns inserted in pits after the barrows were completed.

CREMATION PIT (Fig. 18, 21, 22, Plates 13 and 14)

The cremation pit and its associated deposits of carbonised wood were an extremely interesting feature of the barrow. It was dug after the Stage I mound was completed, close to its base on the eastern side, and must be associated with the Stage II capping mound, as the cremation pit is the only structure associated with it. The Phase 3 urns were inserted after the mound was completed. The pit, which was slightly bell-shaped in sections, was dug into the natural subsoil, to a depth of 1 ft. 8 in. from the Bronze

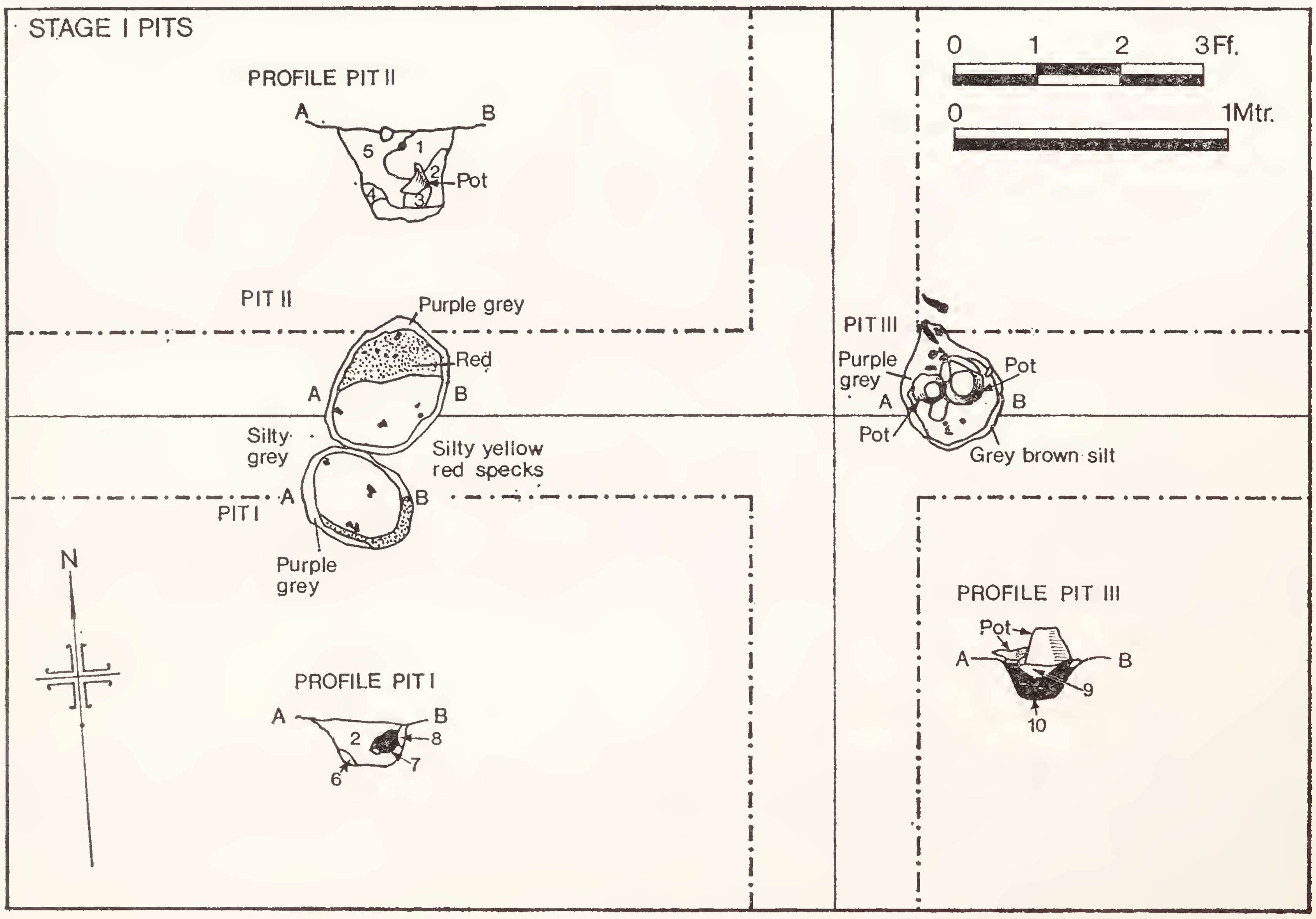


Fig. 20. Stage I Pits beneath Cairn. Pits I, II and III

Soil Key

1. Dull yellow to fawn silty soil with charcoal specks.
2. Light grey to fawn silty soil, charcoal specks and red tones.
3. Light yellow silt with pink tones.
4. Dull grey silt with traces of charcoal.
5. Dull fawn silty soil with pink tones.
6. Black peaty soil
7. Charcoal.
8. Red, burnt silty soil.
9. Red, burnt silty soil with pot fragments.
10. Black peaty soil with charcoal and fragments of pot.

Age level with a maximum diameter of 1 ft. 6 in. at the bulge half way down the hole; the bottom of which was rounded. The sides, from the bottom to the top, were burnt scarlet by intense heat, or by prolonged burning unmasked by ash in the interior of the pit. In the bottom lay a mass of charcoal 4 in. thick and the charred remains of what appears to be an oak vessel. Above this deposit was a mixture of cremated human bone, wood, ash, charcoal nodules and a minute fragment of bronze. The entire pit was sealed in by reddened soil and debris from the fire. Above this were two lengths of charcoal, 8 ft. long, 6-8 in. wide, 2-4 in. thick, laid north to south across the cremation pit and about 1 ft. 6 in. above (Fig. 21; Plate 13). Whilst these appeared to be planks, it would probably be wrong to describe them as such. Decayed charcoal remains of branches and trunks, circular in section, under pressure from soil and stone apparently settle and collapse in what appears to be flat timbers, or crude planks. The carbon samples which provided the radio-carbon for the pit and the Phase II mound came from the lower part of the pit. The position is marked on the profile (Fig. 22).

The report on the human cremated skeletal remains suggests the body to which the bones belonged, was cremated in a prostrate position on its back with the face on the right side. The cremation must therefore have taken place in the area around the pit, where there was evidence of considerable burning (Fig. 21). The bones must have been inserted into the cremation pit after the body had been burned accompanied by the wooden vessel. Apparently the bones were of one individual, probably female, aged 17 to 25 years.

THE KERB (Fig. 17)

On the southern side of the completed barrow in Quadrants C and D were three large stones, one of which had been disturbed, about 18 ft. from the centre and strung out over a distance of about 13 ft. As these rocks were several times larger, with one exception in the cairn, than those used to cap the barrow or construct the cairn, it is possible they may represent the remains of a robbed kerb encircling the barrow just within the original Stage II barrow perimeter. It is of course possible that they had rolled down the mound due to their shape and weight.

URNS INSERTED IN THE STAGE I AND II CAPPING MOUNDS

Within Quadrant C, west of the central north-south baulk, were four broken and one intact urn placed in pits cut through either the Stage I and II mounds or both. In all cases the prehistoric natural surface was penetrated and in one there was a quantity of charcoal.

PIT II (Fig. 17)

This hollow on the perimeter contained Urn 1, standing on its base in a deposit of charcoal. So near the surface was the vessel that the collar had been broken and eroded away by trampling prior to excavation. There were no traces of cremated bone or grave goods beside, or in, the vessel.

PIT V (Fig. 17)

Containing the remains of two urns, 2a and 3, the pit had penetrated both capping mounds to the natural near the cairn and close to the north-south baulk in Quadrant C. There were only a few pieces of charcoal. The larger of the two pots was face downwards and the base was broken and missing. Urn 3 was in small fragments mixed with the remains of the other pot. There were no grave goods, or cremated bone associated with either pot and the infill of the pit was yellow subsoil at the bottom and turf soil and scrape at the top. There was no indication whatsoever of entry or disturbance in the pit which was dug after the completion of the barrow.

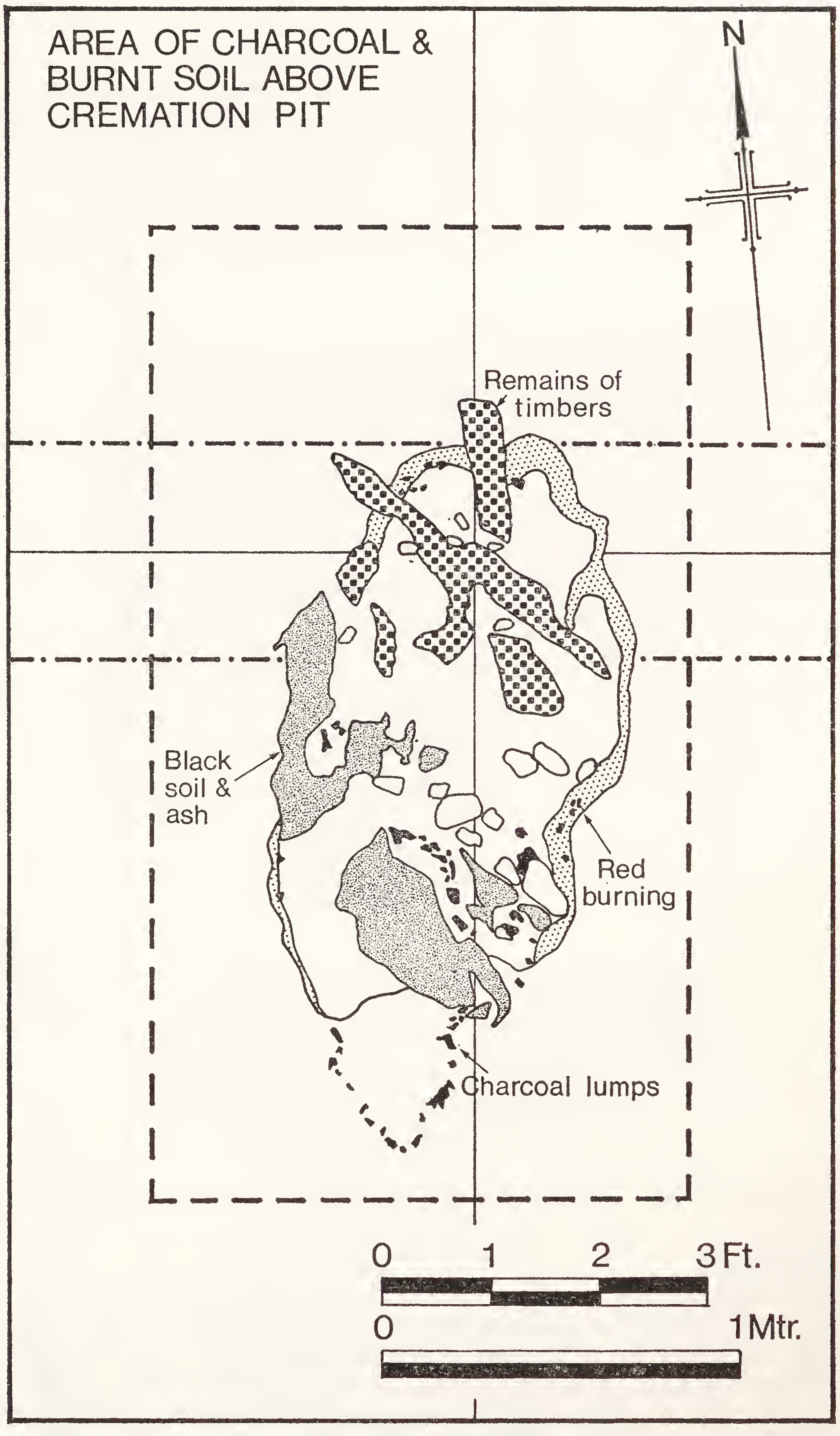


Fig. 21. Cremation pit timbers etc.

Pit VI (Fig. 17)

This hollow to the south of Pit V was cut through the north-south baulk into quadrant D. No grave goods, charcoal, cremated bone or evidence of later break-in was apparent.

Pit VII (Fig. 17)

The vessel, Urn 4, was placed in a shallow hollow cut in the outer capping mound with a trace of charcoal south-west of Pits VI and V. Unlike the other pots it was intact and was found inverted. No grave goods or cremated bone were found associated with it.

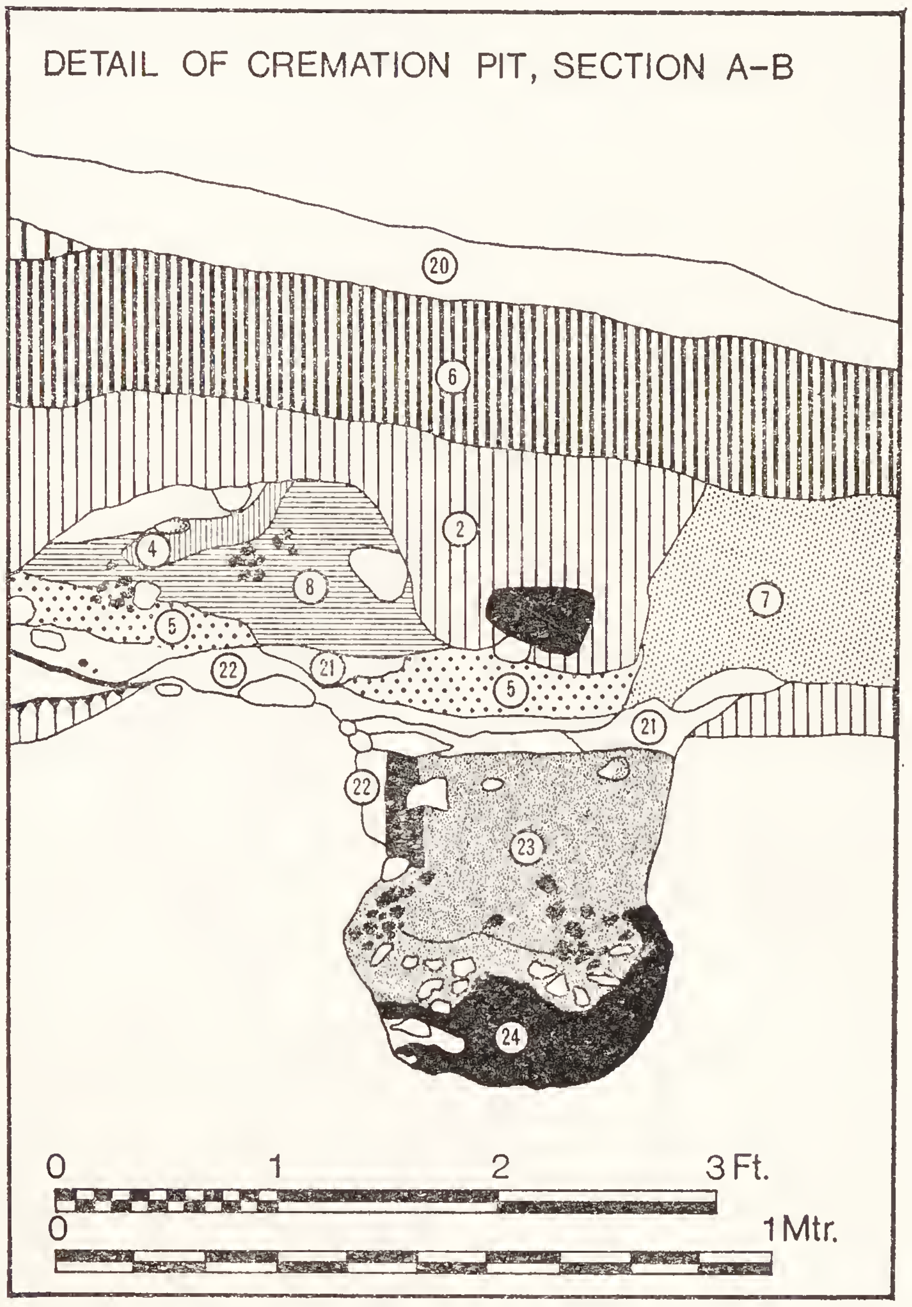


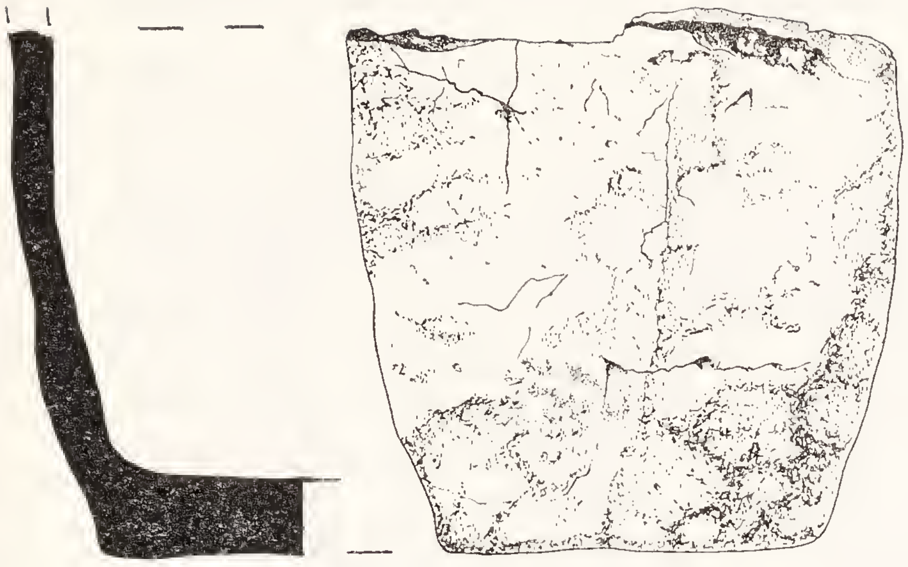
Fig. 22. Profile of cremation pit. Soil key as Fig. 18.

III

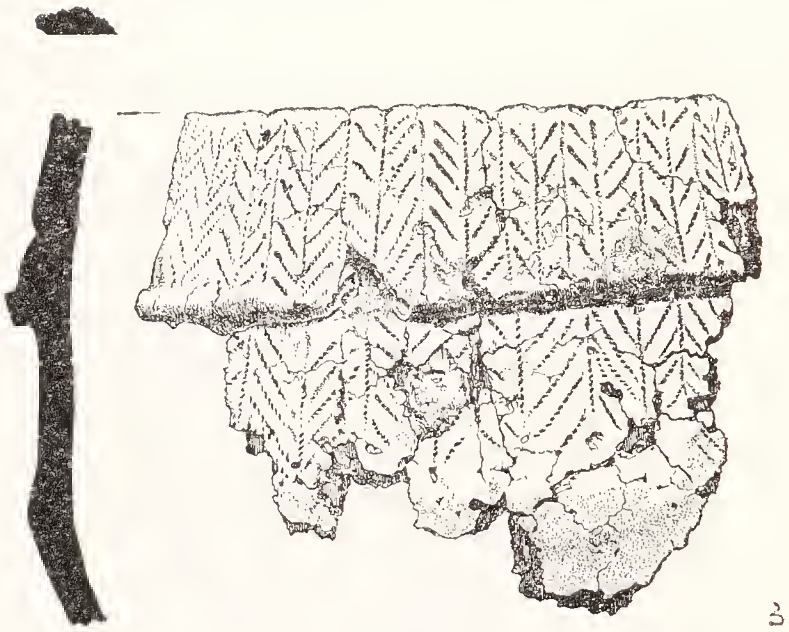
EVALUATION OF THE BARROW'S STRUCTURES AND HISTORY

Stage I and Phase 1

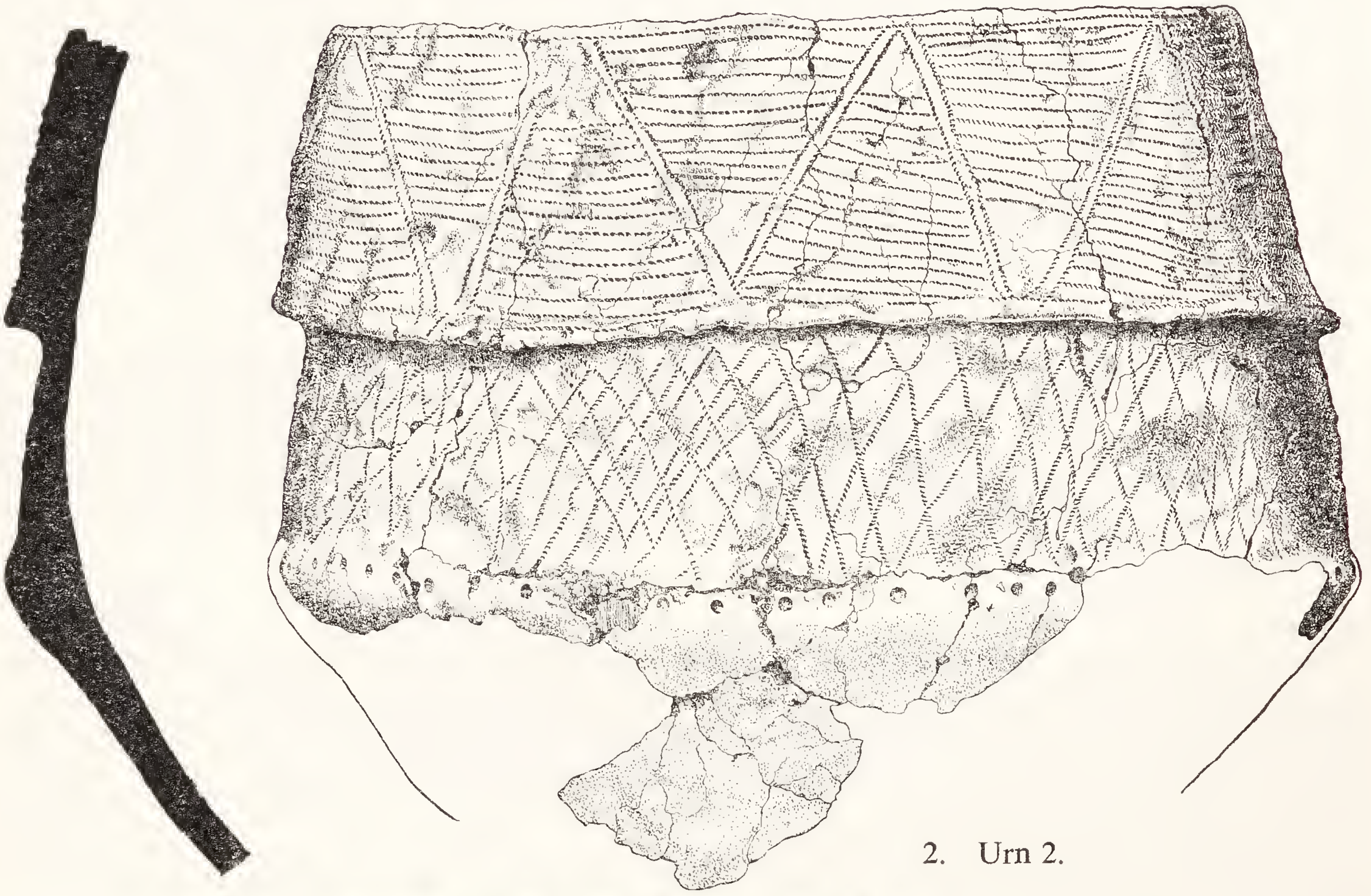
The cairn of irregular and loose sandstone blocks, some reddened by fire, had been erected over three small pits, containing reddened soil, charcoal and in two cases pots, cut into the Bronze Age natural to east and west of the centre. In the heart of the cairn there had originally been a large vessel, removed by robbing in the nineteenth century or earlier. Whether this pot had been inverted or not, cannot be ascertained, due to its removal except for a small piece. Only two small fragments of cremated bone were recovered in the robber debris. The rest, of course, may well have been removed intact in the pot. One of the western pits contained a small collared urn (Fig. 24) and the eastern pit held an intact collared urn and shattered devalued collared urn in a Beaker-type fabric. There cannot be much doubt that the robbed large vessel contained a primary



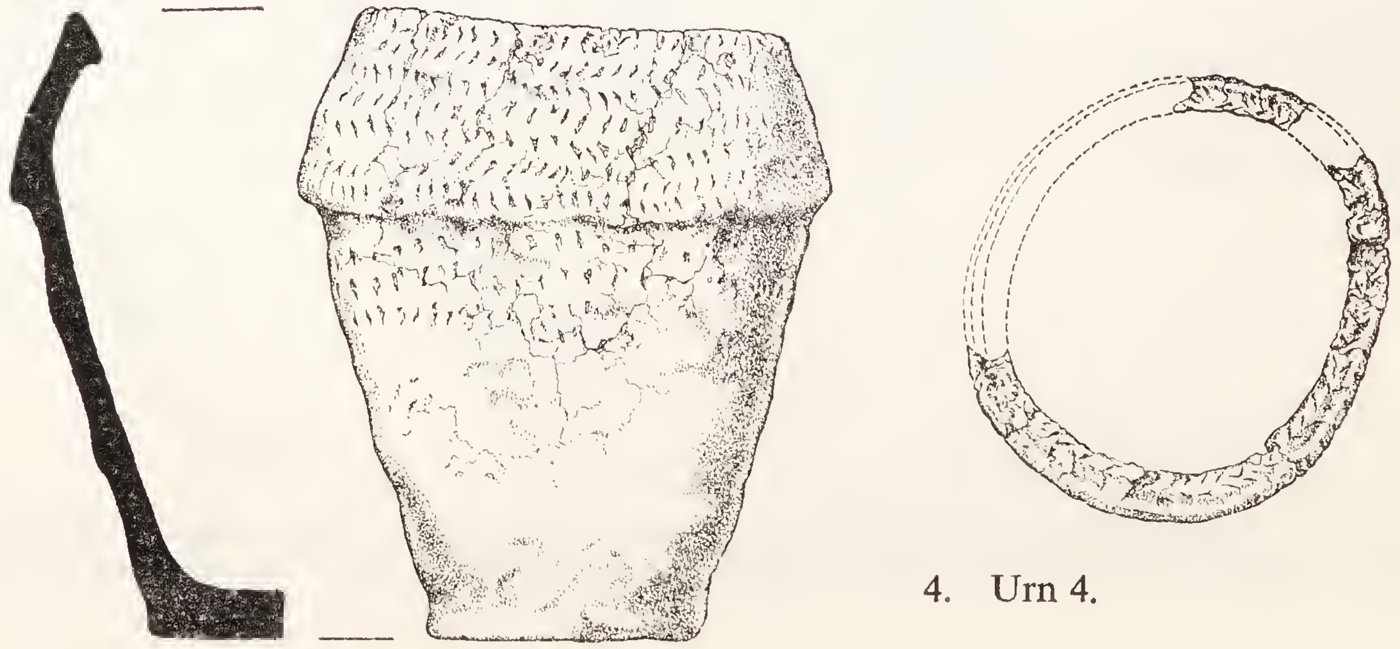
1. Urn 1.



3. Urn 3.



2. Urn 2.



4. Urn 4.

Fig. 23. Urns other than First Phase.

burial, or burials round which the pits and associated urns were placed as part of the burial ritual sealed beneath the cairn.

Urns 5, 6 and 7 and the associated pits were certainly contemporary with the central burial and must represent some form of rite connected directly with and surrounding the primary urned burial. These were certainly not associated with satellite cremations as no trace of cremated bone was apparent. Also it is unlikely that cremated bone would dissolve under the soil conditions beneath the cairn. After the completion of the burial ritual the cairn was built and capped by an outer mound of silty soil and subsoil 24 ft. in diameter east-west and 26 ft. north-south. The Stage I barrow was completed prior to the excavation of the cremation pit (Fig. 17 and 18) on its eastern edge partly in the Stage I mound and chiefly on the Bronze Age land surface outside. The radio-carbon date for the charcoal from the lower part of the cremation pit is BP 3,485±90 i.e., giving a 67% chance that the true age lies between 1625 and 1445 B.C. Therefore as the Stage I Phase 1 barrow mound is structurally earlier than the cremation pit, possibly only a matter of months, the radiocarbon determination supplies an interesting *terminus post quem* for the initial phase. Furthermore this date indicates that the three pots sealed beneath the cairn, (there is no possibility of an insertion later than the cremation pit) are in fact earlier than it. This means, if the radio-carbon date is accurate, that collared urns of the type buried in pits under the cairn date to between, or just before 1625-1442 B.C. (in radio-carbon years) with a half life of 5,568, or, with a half life of 5,730, 1787–1607 B.C. This latter date would appear too high for urns of the Wykeham class.

STAGE II AND PHASE 2

After the completion of the Stage I mound the cremation pit was excavated, used and sealed by an outer capping mound of scraped up turf soil and subsoil which not only covered the pit, but the entire Stage I mound as well. The radio-carbon horizon for this stage is, as has already been stated, 3485±years BP. The Phase 2 mound represents the last structural addition to the barrow. If an outer kerb existed it must have belonged to this phase.

PHASE 3

During this phase there were no structural additions to the barrow. Prior to the accumulation of turf soil in any quantity, possibly soon after the barrow's completion, several damaged and one intact Bronze Age urn were inserted in pits cut through the Stage II mound to the natural. This entry is clearly indicated in the north-south central section. All the urns inserted in Phase 3 have two factors in common, i.e., they are contemporary with the Stage II, Phase 2 mound, or later, and none of them were associated with the grave goods. These pots must date in fact on structural grounds to 3,485±90 years BP, that is 1625–1442 B.C. or later.

Due to robber damage in the centre of the cairn it was not possible to ascertain whether or not there was a break-in during Phase 2 to insert any of the cremated bone from the pit in an urn, or otherwise, together with or above the primary burial in the centre of the cairn. It is thought this is unlikely to have happened and it is suggested the body was cremated close to the pit and the cremation debris buried in the pit. An unburnt pit of the Wykeham type and size was located at Hutton Buscel, Barrow I in 1962 and contained cremated bone, capped by a stone and a square canopy of carbonized wood about 6 ft. square.

IV

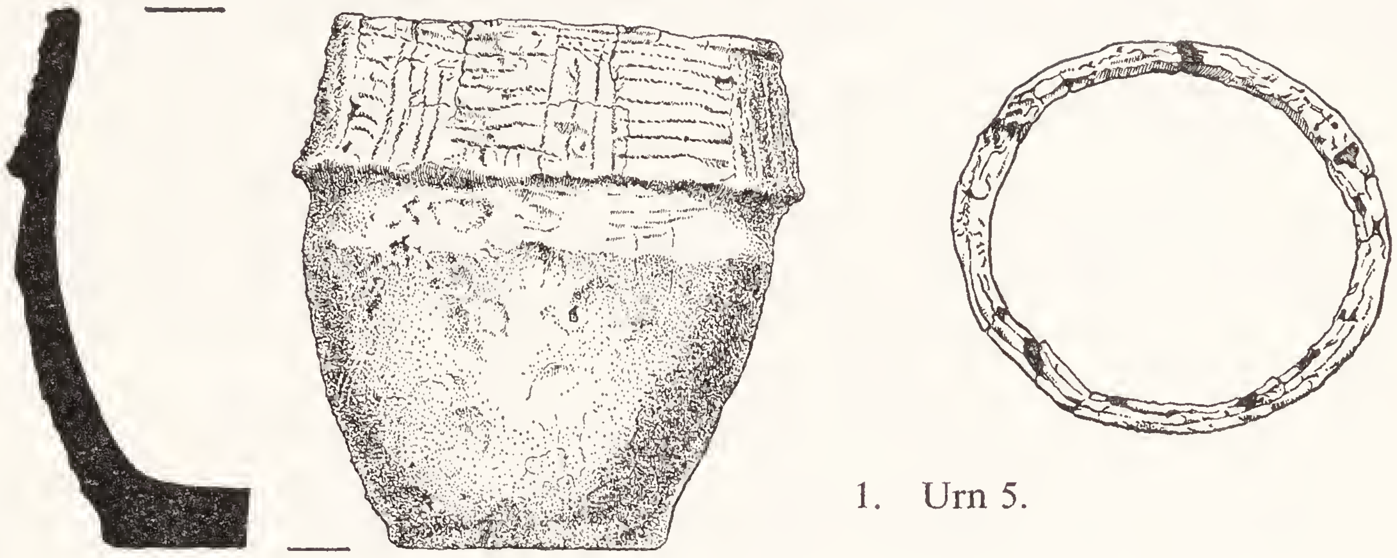
THE FINDS

THE POTTERY

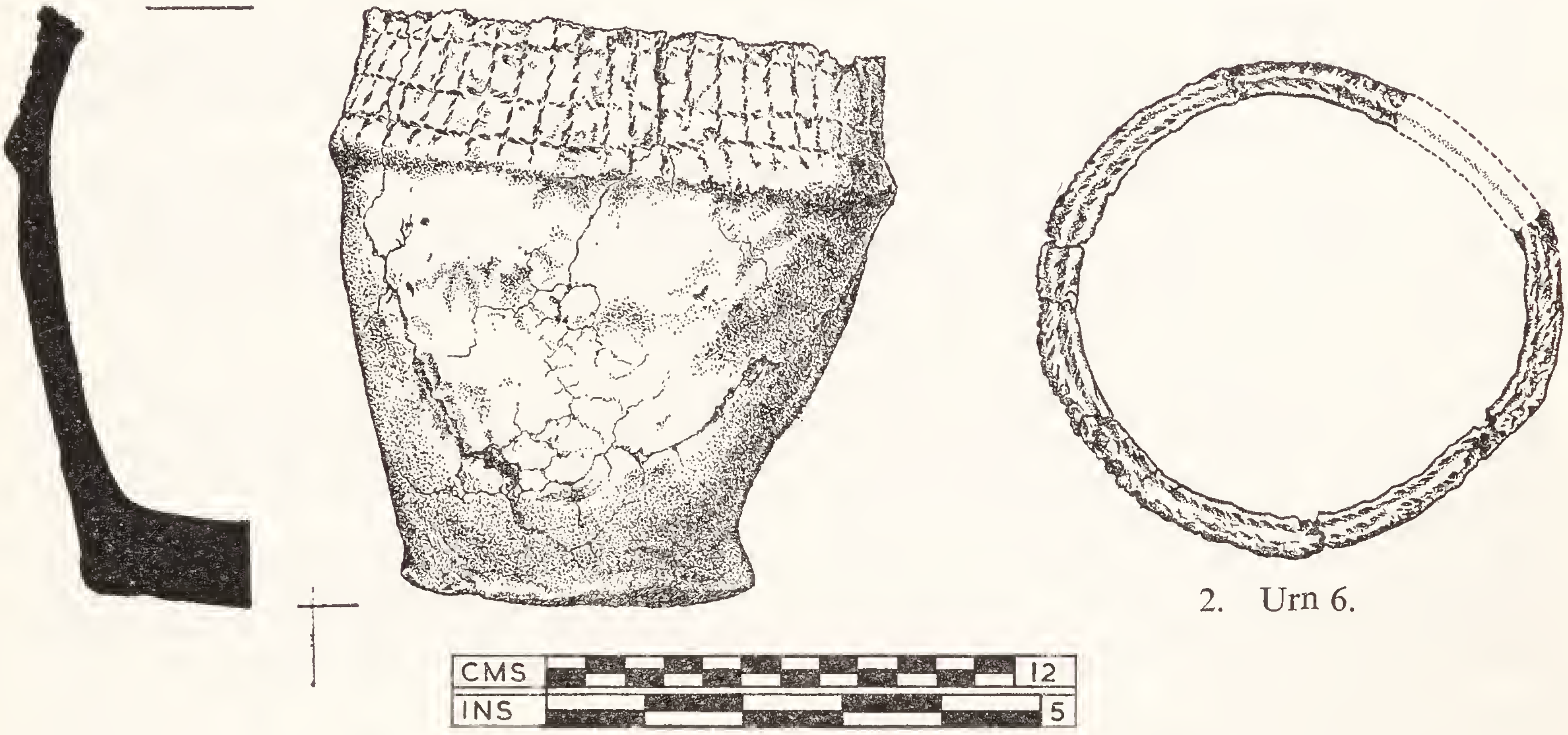
PHASE 1 URNS. Fig 24, Plate 15

This group of pots came from sealed deposit beneath the Stage I and Phase 1 cairn.

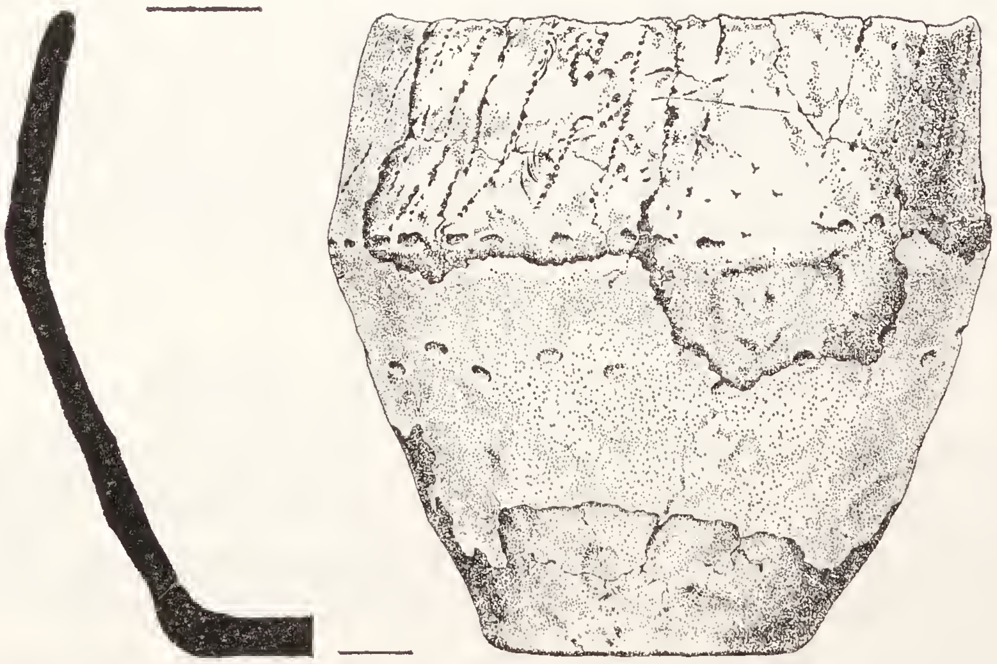
Urn 5, Pit. 2. Small collared urn with slightly inclined rim and collar, shallow neck and fairly broad flat base. Vestiges of finger and thumb impressions on exterior of body beneath shoulder as a result of



1. Urn 5.



2. Urn 6.



3. Urn 7.

Fig. 24. Phase 1 Urns.

modelling – not decor. Vertical and horizontal lines of twisted cord decor on collar and traces of similar lines and interior of inclined edge of rim. The decoration had been smudged by wiping prior to the pot becoming leather hard. Height 4·8 in. Width of base 2·5 in. Rim 4·1 in. Base of collar 4·7 in. Shoulder diameter 4·2 in.

Fabric: dull fawn to light fawn patches with zones of pink with fawn. Fairly smooth uneven surface with a few protruding grits. Cracks caused by pressure on rim and collar. Firing temp. *c.* 700 C.

Urn 6 Pit 3. Small asymmetrical collared urn associated with Urn 7. Slightly internally inclined collar and rounded rim and broad flat base with indications of foot and traces of flanging. No trace of shoulder. The pot had settled, or sagged, due to the body being too soft after modelling, or receiving a blow before hardening, probably the former. Decoration on the collar consisted of vertical and horizontal network of fairly thick cord-impressed lines slightly smudged in places, as in the case of Urn 7. Height 6 in. Width of base 3·9 in. Base of collar 5·75 in. Neck 5·6 in.

Fabric: dull fawn to light fawn with some pink tones. A few protruding grits; surface smooth, but much cracked. Dull fawn lime deposit on part of lower surface. Firing temp *c.* 700 C.

Urn 7. Pit 3. Small collarless urn with slightly inturned rim. Oblique smudged cord imprints between rim and shoulder. Two zones of oval dimple decor on carination and on body below. Height 5·8 in. Width at shoulder 6 in. Rim 5·4 in. Base diameter 2·9 in.

PHASE 2 URNS: Fig. 23

Second Stage Mound

Urn 1. Base and body of urn, the upper part being destroyed by erosion of the barrow surface. Dull fawn with patches of dull grey and red. Smooth irregular fabric with many cracks. Interior dull grey. Core black to grey. Base width 3·4 in. Maximum width 5 in. Firing temp. *c.* 700 C.

Urn 2. Large collared urn in inverted position in hollow with remains of Urn 3. Marked flange on lower part of collar: residual cordon, or rounded carination on the shoulder. Decor executed with fine cord imprints. Chevrons on collar; renticulated design above carination. Dimples on shoulder. Three lines of same cord imprints on bevelled inside of rim. Fine smooth light to dull fawn fabric with patches of dark grey to black; possibly soot. Diameter of rim 10·1 in. Lower edge of the collar 11·9 in. Shoulder 12·3 in. Height *c.* 12 inches. Firing temp. below *c.* 700 C.

Urn 3. Small highly decorated collared urn in fragmentary state. Associated with Urn 2. Slightly inclined collar with rounded rims. Decor on collar and between collar and shoulder consisting of vertical lines and chevrons of very fine cord imprints. Dull fawn fairly soft fabric with smooth surface and patches of dull red. Interior the same but patches of thin black deposit. Possibly soot. Core light fawn to pink. Diameter of rim C. 5·2 in. Firing temp. below *c.* 700 C.

Urn 4. Small collared urn with interned rim and narrow base. Small stab incisions on collar and body and small chevrons on flat inclined rim. Large areas of light red to pink with areas of dull fawn and grey patches of lime. Fabric smooth, but cracked and friable. Core pink to red. Height 5·8 in. Rim 3·9 in. Base of collar 4·8 in. Base diameter 2·5 in. Firing temp. *c* 700 C. Inverted in hollow (Fig. 17).

V

SPECIALIST REPORTS

1. RADIO-CARBON REPORT

National Physical Laboratory Report No. 236, 23 May 1969. Ref. C160. Sample from Wykeham Moor, Barrow I. Cremation Pit I. AM 680602. Wood Charcoal (2 CC) Oak Q – robur type Half life of C14 used in calculation is 5,568 years. Age BP (1950) 3,485 years±90, i.e., between 1625 and 1445 B.C. The sample was submitted by L. Biek for Ancient Monuments Laboratory.

2. CREMATED BONE BY J. D. DAWES

WYKEHAM MOOR, 1967. BARROW I, CREMATION PIT IV, TRENCH III. SECTIONS P/Q

The fragments of cremated bone were sorted as far as possible into body areas, cleaned, weighed, measured and where possible the individual fragments were identified. Measurements and observations were made on the identified fragments.

Preservation was generally good with clear edges and sutures. Colour of fragments varied from cream through dark grey to white. The degree of calcination varied somewhat, the fragments were hard rather than brittle and many fragments showed extensive fisuring and some twisting. The total weight of bone fragments was 31 oz. (*c.* 880 gm.). There was no definite sign of deliberate breakage, the size of the fragments varying from 5-120 mm, roughly divisible into halves at about 50 mm. All parts of the body appeared to be represented and no identifiable part was duplicated, thus suggesting strongly that this cremation represented a single individual.

The cranial thickness averaged over 6 readings was 4.3 mm, which lies in the middle of the likely range with a slight preference towards masculinity, (Gevall 1963) but the absence of noticeable cranial ridges, straight upper orbital border and the size of the intact right tibia head all indicate that this was probably female.

There were many cranial fragments with extensive sutural edges and one piece with a length of the sagital suture which was hanging interlocked but not yet fused. The sockets in the mandible indicate the possession at the time of death of all teeth fully erupted. It is thus apparent that this cremation represents the remains of a young adult probably between 17 and 25. No signs of disease or ante-mortem injury were seen. The spines and arches of several vertebrae were present with fairly light firing and a large portion of right and the medial portion of the left scapula, although fairly thin bones, had survived. This would suggest that the body had lain on its back under the pyre, (Calvin Wells 1960). The more burnt condition of the left side of head and jaw may similarly suggest that the head lay on the right side.

Breakdown of Fragments as % weight of total

Limbs	56%	Ribs	9%
Head	27%	Phalanges, girdles etc.	4%
Vertebra	4%		

Parts specifically identified

Upper ends both Tibias. Right side complete – bicondylar breadth 68 mm
Anterior portion shaft Tibia
Part Upper end right Fibula
Fragment upper end left Fibula
3 parts head and neck humerus
2 parts shaft humerus
Lower part lateral margin left and right Humeri.
Femur, part shaft
Parts all 4 condyles femur
Lesser Trochanter
Part head and neck right femur
Part head left femur
Fragment medial end clavicle

Glenoid cavity and adjacent parts right scapula
Medial border and part of spine left scapula
Left Patella
Fragments pelvis
Mental region, most parts both horizontal rami and both condyles of mandible.
Many pieces vault – tables of skull often split.
Both petrous temporals
Right occipital condyle
Right mandibular fossa with root zygomatic arch and part wing sphenoid.
Part left greater wing sphenoid.
Upper border right orbit.
Nasal portion of right maxilla
Part left frontal with edge of orbit.

TEETH

Provisional placing of teeth: rt 3, 4 and 5 due to damage of socket

Rt	Lt
8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8

Gevall, N. G. *Science in Archaeology*, (1963), 379–390.
Wells, C., *Antiquity* 34, (1960), 29.

POLLEN ANALYSIS By G. W. DIMBLEBY

Two samples were analysed for pollen, one from the old land surface beneath the barrow (No. 1) and one from the turf-line believed to represent the surface of the barrow when it was robbed in *c.* A.D. 1860 This second sample (No. 5) came from a point where the turf was covered by debris, presumably from the robber hole.

The analyses are presented in the Table.

OLD LAND SURFACE

Grasses (*Gramineae*) form 40% of the total of pollen and spores at this level, and with a NAP/AP ratio of 721 the landscape was apparently open. The pollen spectrum represents farming, probably of a pastoral nature, since no cereal pollen was found. The high proportion of ribwort plantain (*Plantago lanceolata*) accords with this, as does the presence of a number of other weed types. Heather (*Calluna*) was almost completely absent, but hazel (*Corylus*), bracken (*Pteridium*) and other ferns (*Dryopteris* type) were present in quantities high enough to suggest scrub woodland in the neighbourhood. Alder (*Alnus*) and oak (*Quercus*) could also have been components of this woodland.

THE UPPER SURFACE

We are told that this barrow is on land which was unploughed moor until 1927 when it was planted with Sitka spruce. Prior to that there had been estate plantations of pine on parts of this moor, some of which according to early O.S. maps, came near to this site. It could be expected, therefore, that a 19th-century pollen spectrum would be made up largely of heather, with some influence of pine.

The analysis, however, shows more than 50% of oak pollen, and the NAP/AP ratio of 52 clearly indicates woodland conditions. It seems impossible to reconcile this spectrum with a 19th century date: it is known, however, that this area has carried oak woodland at some time in the distant past (Yeatman, 1955, p. 16). How long ago that was is as matter of conjecture, but it would seem very improbable that soil conditions would have permitted the growth of oak woodland in recent centuries (Dimbleby 1962).

It is difficult to draw conclusions from a spot sample unsupported by adjacent samples. There are certain similarities between some elements of No. 1 and No. 5; the differences, however, are more striking. It is possible that the pollen in No. 5 is of dual origin, some being inherent in the soil of which the mound is made, and some, notably the oak, lesser amounts of birch, bracken and heather, as well as traces of beech (*Fagus*), pine (*Pinus*) and cereal, being derived from the pollen rain after the construction of the barrow. However, that may be, and there is no means of proving this hypothesis, it is quite clear that sample No. 5 represents a soil surface under a vegetation of the acidic oakwood type.

As it seems unlikely that this type of vegetation has existed in recent times, it would be reasonable to interpret this surface as a prehistoric one, representing re-growth of the forest after the construction of the barrow. In this case, however, this surface must have been protected from later vegetation changes which would have masked this pollen spectrum with a predominance of heather pollen. As this has not happened, this surface must have been covered over for a long time, and this therefore casts doubt on the interpretation of the overlying material as debris from the robber hole. It is suggested that the barrow was constructed in two stages with a pause in between, a practice which has been recorded before for barrows in this area (Dimbleby 1955, 1962).

Dimbleby, G. W. (1955). Ecological Studies of Buried Soils, *Advmt. Sci., Lond., 12*, 11–16.
——, — (1962). Development of British Heathlands and their Soils. *Oxf. For. Mem.*, No. 23.
Yeatman, C. W. (1955). Tree Root Development on Upland Heaths. *For. Comm. Bull.*, No. 21.

WYKEHAM MOOR—BARROW 1

Species	*Counts*		*Percentage*		*Absolute pollen frequency*	
	1	5	1	5	1	5
Alnus	21	21	4·5	1·7	12,264	12,264
Betula	4	26	0·9	2·2	2,336	15,184
Fagus	—	1	—	0·1	—	584
Pinus	—	3	—	0·2	—	1,752
Quercus	12	615	2·6	51·1	7008	359,160
Tilia	1	2	0·2	0·2	584	1,168
Corylus	35	35	7·4	2·9	20,440	20,440
Ilex	1	+	0·2	+	584	+
Calluna	1	67	0·2	5·6	584	39,128
Erica Tetralix	—	1	—	0·1	—	584
Ericaceae, misc.	+	2	+	0·2	+	1168
Gramineae	187	201	39·8	16·7	109,208	117,384
Cereal	—	2	—	0·2	—	1168
Caryophyllaceae						
cf. Scleranthus	2	1	0·4	0·1	1168	584
Chenopodiaceae	+	—	+	—	+	—
Compositae						
Artemisia	—	2	—	0·2	—	1168
Centaurea	—	1	—	0·1	—	584
Liguliflorae	2	3	0·4	0·2	1168	1752
Tubulifforae	1	+	0·2	+	584	+
Cuscuta	5	7	1·1	0·6	2920	4088
Cyperaceae	—	2	—	0·2	—	1168
Plantago lanceolata	63	49	13·4	4·1	36,792	28,616
Potentilla	—	2	—	0·2	—	1168
Ranunculaceae	7	3	1·5	0·2	4088	1752
Rubiaceae	+	—	+	—	+	—
Succisa	+	1	+	0·1	+	584
Umbelliferae	1	+	0·2	+	584	+
Varia	4	3	0·9	0·2	2336	1752
cf. Botrychium	—	1	—	0·1	—	584
Dryopteris Type.	41	36	8·7	3·0	23,944	21,024
cf. Ophioglossum	8	2	1·7	0·2	4672	1168
Polypodium	7	7	1·5	0·6	4088	4088
Pteridium	67	107	14·3	8·9	39,128	62,488
		NAP	721	52		
		AP				
Total	470	1203			274,480	702,552

The Council of the Society wishes to thank the Department of the Environment for a grant towards the cost of publishing this article.

EXCAVATIONS AT THE ROMAN TILERY AT GRIMESCAR, HUDDERSFIELD, 1964

By J. G. Purdy and T. G. Manby

ABSTRACT

This Roman tilery site was first discovered in 1590 and a rock-cut rectangular kiln was excavated in 1955–6. In 1964 a complete dump of tile debris, portions of two other dumps and the partially disturbed stoke hole of a kiln were excavated. The tilery operated to provide building material for the two phases of reconstruction of the nearby fort at Slack in c. A.D. 100 and 120. Products were roofing tiles, with some tegulae stamped COH. IIII. BRE., hypocaust elements and pottery cooking pots, jars, bowls and flagons.

History

The Grimescar tilery site was discovered in the late sixteenth century in circumstances recorded in the Dodsworth Manuscript, preserved in the Bodleian Library, Oxford.[1]

> 'In the yeare of owre Lord 1590 certain Colyers working in Grimskarr in Fekisbye in framynge a pitt to burn charcoales discoverid a certain worke in the earthe of most fyne bricke, yt resemblid a Roundwell a four yeards depe or not so much, cunynglye walled with bricke and having upon the topp a very broad brickstone coveringe the same with a round ledg wrought upon it whereon where written divers Roman carecterrs namelye these-COHIIIIBRE. Next adjoining to yt had been an archid cave wherin great fyers had bene made, and there were four condithes going from the place in the lower part of the grounde and comyng forth some 8 or 9 yeards of it, wherein had runyd some kind of metall for the stones was all congealed together. There was about it both redd, and blewe, and yellow bricke verye curyous and good, a kind of hard sinders in many places with some traces of very thin earthin pots verye curyously wrought ..... It was placed in the myddst of the wodd in a descending place near unto a spring of water. The name of the wodd is callid Grymskarr, but the old name is Springer'.

The discovery of roof tiles at the Roman fort and bathhouse site at Slack, three miles west of Grimescar, with the stamp COH. IIII. BRE. established the date and cause of the tilery's existence.[2]

In 1954 a group of boys picked up tile fragments on the weathered edge of an old quarry in Grimescar Wood and a trial excavation was undertaken by a party of boys from Fartown School under the direction of Mr. Donald Haigh. Excavations were continued in 1955 and 1956 by Miss A. M. Maltby (Mrs. J. S. Hallam).

The 1955–6 excavation examined part of a dump of charcoal and tile debris on the lip of the quarry (Area B) and located the site of a tile kiln (Area C). The kiln is described as a rectangular area, roughly 13 ft. by 16 ft. where the yellow clay had been removed and the underlying sandstone quarried out to a depth of three or four ft. A rock ledge and a series of transverse piers had been left standing and consolidated with clay. The piers supported the firing chamber floor composed of sandstone slabs, and the rock-cut ledges supported the side walls of a chamber formed of stone bonded with clay. The scarcity of stone, and numerous lumps of burnt clay, suggested that the kiln roof had been of clay and the site had been in use long enough to require repair. Tiles, bricks, fragments of mortaria and other coarse pottery vessels are reported, along with some tiles stamped COH. IIII. BRE.[3]

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[1] Camden, J., *Britannia* (1600), p. 613; Richmond, I. A., *Huddersfield in Roman Times* (Huddersfield 1925), pp. 57–8.

[2] Dodds, P. W. & Woodward, A. M., 'Excavations at Slack 1913–1915', *Y.A.J.*, XXVI (1922), pp. 1–92.

[3] Hallam, A., 'The Roman Tilery in Grimescar Wood', *Huddersfield & District Archaeological Society Bulletin*, No. 16 (1965), pp. 1–4.

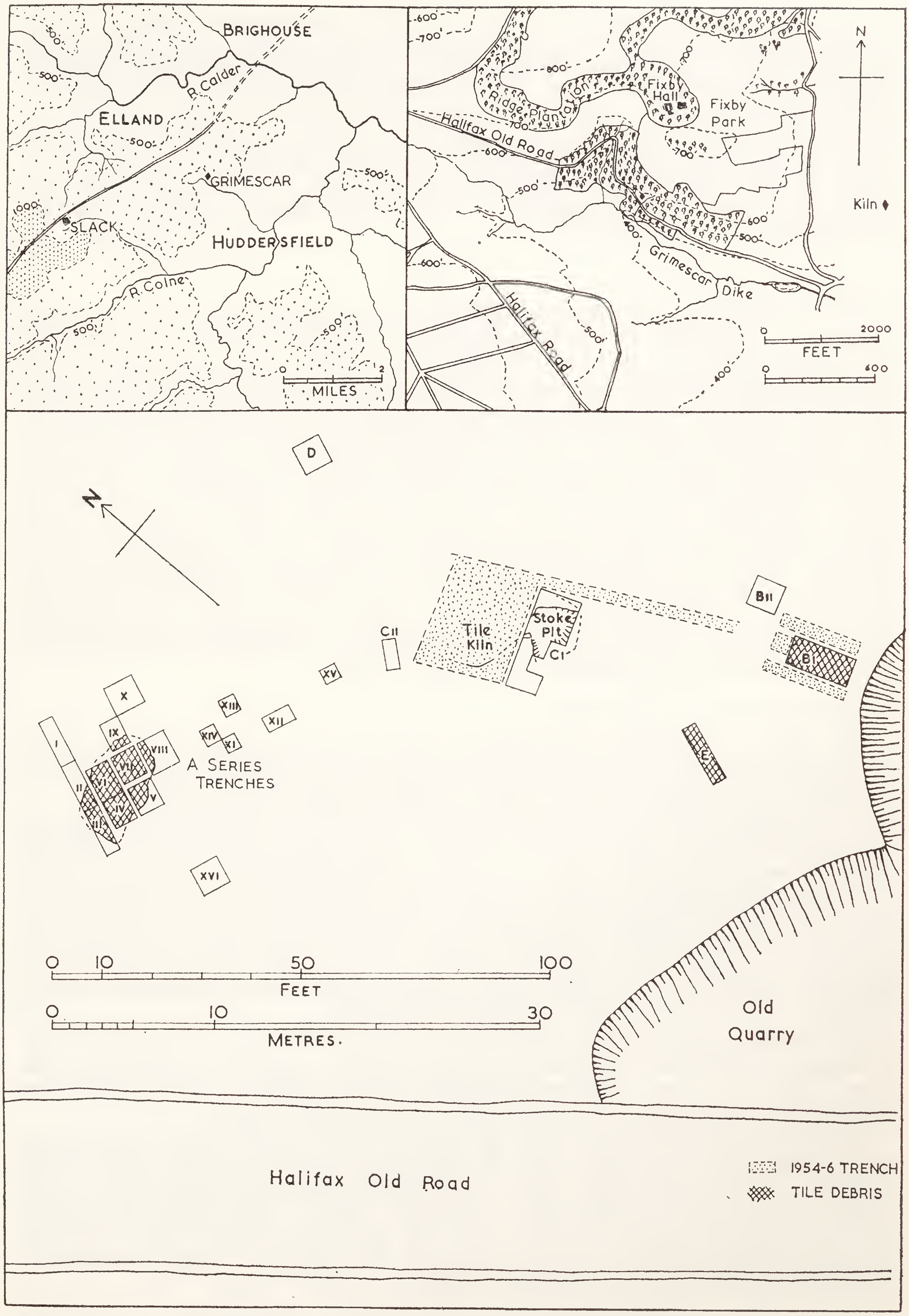

FIG. 1. Grimescar Tilery, location map and site plan. Derived from the Ordnance Survey map of 1900.

During the years following the excavation there was much sporadic digging by casual pot-hunters around the kiln site. Excavations in the spring of 1964 were carried out by the Tolson Memorial Museum, Huddersfield, and Heath Grammar School, Halifax, under the direction of T. G. Manby and J. G. Purdy, assisted by J. R. Earnshaw, P. Hand and J. R. Middleton, together with boys of the school. The purpose of the work was to obtain a series of tilery products, to locate the stoke-hole of the 1955–6 kiln, and to fill in and level the dumps of the earlier excavation. Permission to excavate was readily granted by the Agent, Messrs. Crowther, on behalf of the Thornhill Yorkshire Estates Co., who kindly donated the finds to the Tolson Memorial Museum, Huddersfield.

THE SITE (Fig. 1)

The tilery is situated in Grimescar Woods, in the Township of Fixby on the western outskirts of Huddersfield; the Roman road from the Slack Fort runs along the crest of the ridge about one mile to the north. Grimescar Wood covers the northern slope of the steep-sided valley of the Grimescar Dike, which flows eastward to the River Colne. The hillside consists of rocks of the Lower Coal Measure Series with alternating beds of sandstones and clays beneath the thick capping of Elland Flags Sandstones that form the top of the hill. The tilery site occupies a platform about half-way down the hill slope between 480 and 500 ft. O.D. (Nat. Grid Ref. SE 131191). Immediately to the east a stream flows down the hillside and the platform has been quarried away along the western side of the stream, possibly to provide material for the construction of the Halifax Old Road that runs immediately below the tilery and was engineered by John Metcalfe, 'Blind Jack of Knaresborough', in 1777.[4] The junction of the hillside and the upper edge of the platform is marked by a line of pits and hummocks that suggests an attempt has been made to locate a coal seam; some poor coal does outcrop in the hillside below the Halifax Old Road. The area available for excavation is limited by the standing timber and the presence of the mining features.

THE EXCAVATION (Figs. 1 & 2)

Five areas were subject to examination; Area A had pottery and tile fragments exposed on the surface, Areas B and C were adjoining trenches excavated in 1955–6 and Area E was a space between the trees and shrubs growing on a slight bank.

Area A. Some 60 ft. (18 m.) southwest of the tile kiln site excavated in 1955–6, and separated from it by a shallow gulley, a grid of trenches AI–XI revealed a complete dump of tile debris. The dump was oval in shape, 21 ft. by 12 ft. (6.5 m. by 3.7 m.) across and rested on natural brown clay derived from the weathering of the underlying shale. The debris layer consisted of tile fragments, pieces of burnt sandstone and clay, and some pottery sherds; the layer was 1 ft. (30.5 cm.) in thickness and covered by a layer of dark humus soil 6 in. (15 cm.) thick. The majority of tile fragments belonged to the lugged voussoir tiles; tegula and imbrex tiles and pottery fragments made up the remainder of the ceramic content.

The excavation was continued eastwards by Trenches AXII–XIV but only a few small pieces of weathered tile were recovered from the clayey layer below the humus topsoil. The same result was obtained further down the slope in Trench AXVI and Trench AXV in the gulley towards the east was completely barren.

Area B. On the western edge of the old quarry in the area of the 1954–5 excavations two trenches were excavated. Trench B1 explored the space between three previous trenches and examined a debris layer of kiln rakings and tile fragments. The natural yellow clay was 2 ft. (60 cm.) below the modern surface, and covered by a spread charcoal with tile fragments, burnt stones and sherds 2 to 3 in. (5 to 7.5 cm.) in thickness. Between this and the humus topsoil was brown clay soil with scattered charcoal fragments and small pieces of pottery.

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[4] Crump, W., *Huddersfield Highways down the Ages* (Huddersfield 1949), p. 53.

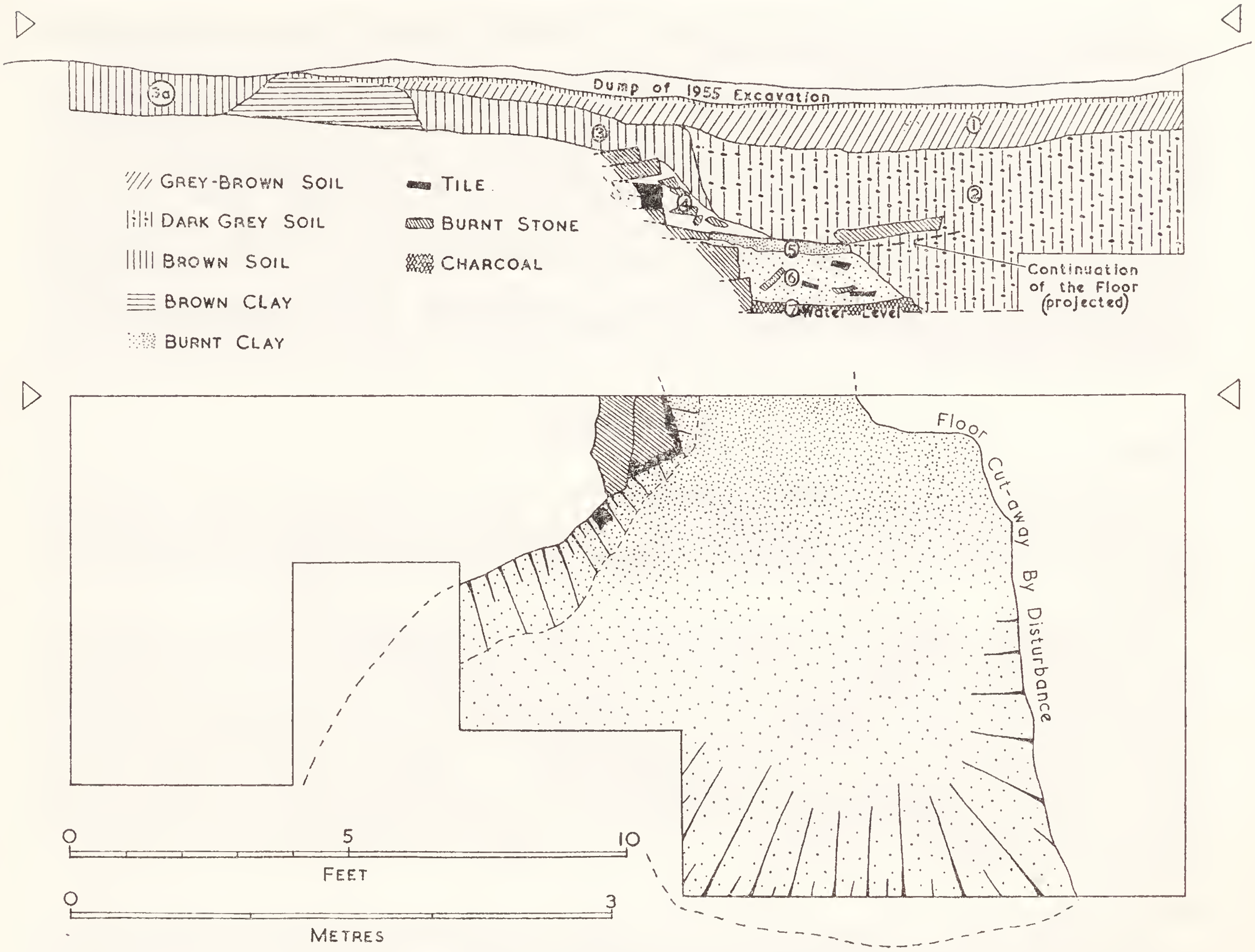

FIG. 2. Trench C. Plan and section of tile kiln stoke pit.

Trench B2, towards the north, produced only scattered pieces of tile in the brown clay soil layer, but the charcoal layer was absent. The stratigraphy of Trench B1 suggested rakings from a kiln site situated towards the east and destroyed by the adjoining quarry. The brown clay soil appears to be a hill-wash layer accumulated after the period of the tilery's activity.

Area C was the tile kiln site excavated in 1955–6, and trenches were dug immediately to the east and west where standing timber permitted. Trench C1 (Fig. 2) examined the area of the stoke pit of the tile kiln. A spoil layer derived from the previous excavation covered a humus top-soil layer, (Layer 1) that rested on brown soil (Layer 3 & 3a) over natural clay and stoke-hole debris. These deposits were cut through by a deep excavation that had removed the northern side of the stoke pit and the cheek of the kiln. The cutting was filled with soft loose dark-grey soil mixed with weathered tile fragments and pieces of stone (Layer 2). This disturbance provided no evidence of date, but the colliers of 1580 come to mind.

The stoke pit had been dug into the natural yellow clay, and the cheek of the kiln flue was lined with coursed sandstone blocks and two flat tiles. Two floor levels existed in the stoke pit, the lowest was covered by a thick layer of charcoal (Layer 7), but was below water level. Above the charcoal was a thick layer of brown soil mixed with tile fragments (Layer 6); these included a complete hypocaust pila and a reeded-rim bowl (Fig. 5. 7). The upper floor was a layer of clay burnt hard and red (Layer 5) 3 to 4 in. (7.5 to 10 cm.) thick; this layer passed eastwards, becoming thicker and less burnt but mixed with increasing amounts of charcoal. Over this floor and in the angle of the flue wall was a triangular deposit of brown soil, pieces of burnt stone and kiln lining, and tile fragments including two with cohort stamps.

Trench C2, beyond the western end of the kiln revealed only a humus topsoil resting directly on natural yellow clay.

Area D. The upper edge of the platform was cratered with pits and dumps that prevented further exploration in this direction. A single trench on the summit of a mound produced weathered tile and pottery fragments in a layer of brown soil, 2½ in. (6.5 cm.) thick between the humus topsoil and the weathered natural clay.

Area E. A single trench was cut across a sloping bank between the edge of quarry and the tile kiln where standing timber permitted. The 6 in. (15.2 cm.) of humus topsoil covered a layer of tile debris, 1½ ft., composed of tile, stone and pottery fragments with patches of charcoal. This debris layer died out southwards and rested on natural yellow clay.

THE FINDS

TILES

The bulk of finds from Grimescar are to be classed as tiles and vary in size from unclassifiable fragments to complete tiles. Enough large fragments were recovered, however, not only to show the range of types produced, but also allow variations to be studied.[5]

The majority of tiles are harsh to the touch and reddish in colour. One may distinguish, however, tiles of a finer fabric that have weathered better than the majority, and since all in this fabric which can be identified are flanged tiles of a particular kind it seems fair to assume that they were a deliberate production. Impurities in the clay, faulty preparation and firing errors are responsible for other differences, such as tiles with a bluish surface or core and others yellow or almost white in colour. Pale tiles are few and represent underfiring; the bluish tiles are more numerous and are the result of over-firing.

Roofing Tiles

A. Tegulae (Fig. 3. 1). These flanged tiles, together with the imbrices, fulfilled the same function as modern roofing tiles, and constitute the bulk of production. The upper surface measurement appears to have been 14 in. (35.5 cm.) in width and 20 in. (50.8 cm.) in length, there are no complete examples and insufficient large fragments to determine variations in size. The variations in detail can be classified:–

1. The thickness varies from 0.4 to 1.5 in. (1 to 3.8 cm.); a graph of tile thicknesses produces an even curve of distribution between the two, with 0.8 and 1.02 in. (2 to 2.6 cm.) as the commonest measurements. It could be suggested that the variations are accidental but a difference of almost one in. (2.5 cm.) must be intentional, as tiles with such a difference would be very difficult to lay together on a roof. A difference in function is implied possibly to meet the requirements of both timber and stone-built structures.
2. The height of the flange varies from 1.5 to 2.5 in. (3.8 to 6.3 cm.), most commonly 2 in. (5 cm.) or more. The smallest of the imbrices described below would not have straddled the largest of these flanges.
3. The thickness of the flanges varies from 0.9 to 1.4 in. (2.2 to 3.6 cm.); the thickest flanges are also the tallest. Again the smaller imbrices would not have covered the thicker flanges On some tiles the flanges are of different thickness from the body. The simplest method of moulding these flanged tiles would have been to press a flat slab of clay into a wooden pattern and then trim the tops and outer sides of the flanges with a knife.
4. Flange insets. On tiles of this type a portion of the flanges had to be cut away at the upper end to permit the course above to overlap. Corresponding notches were required in the lower corners of the tile. The length of flange cutaway varied from 1.6 to 3 in. (4 to 7.6 cm.). The undercut lower corners are of two forms, either triangular in section (Fig. 3. 2) made by two basic cuts or rectangular in section (Fig. 3. 3) made by three basic cuts. There are no standard sizes for these undercut features.
5. Surface finish. The under-surfaces of tiles were either left rough from the mould, or they were cut or scraped smooth.
6. Cementing grooves along the inner face of each flange would serve as a key for the cement laid to secure the covering imbrex. These grooves where either cut with a tool, or formed by the fingers or omitted (Fig. 3. 4).

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[5] Hunter, J. K. T., Manby, T. G. and Spaul, J. E. H., 'Recent Excavations at the Slack Roman Fort, near Huddersfield', *Y.A.J.*, XLII (1967), pp. 95–7.

7. Markings on the upper surface of the tiles are common but consist of shallow, unevenly spaced grooves in double or triple ribbons along the length of the tile. Three pieces of tile with point-incised lines forming a diamond pattern are not definitely from flanged roofing tiles.
8. The Unit Stamp COH. IIII. BRE is represented by the two varieties of stamp already recognised at Slack.[6]

B. Imbrices (Fig. 3. 5). These curved tiles were placed over the flanges of two tegulae laid side by side, and held by cement, thus providing a waterproof joint. The Grimescar imbrices are too fragmentary to provide full details of sizes but a large and a small are indicated; the smaller size is thinner and lighter than the larger examples. The only complete example was 18½ in. (45.7 cm.) long and the external width tapers to allow overlapping 5 to 7 in. (12.7 to 17.7 cm.); the thickness also tapers from ½ to 1 in. (1.3 to 2.5 cm.).

The roofing tiles belong to light and heavy categories that could not have been mixed together on the same roof because of the difference in thickness. A proportion of the light tiles are in the finer fabric mentioned above. While the methods of cutting offsets and forming cementing grooves

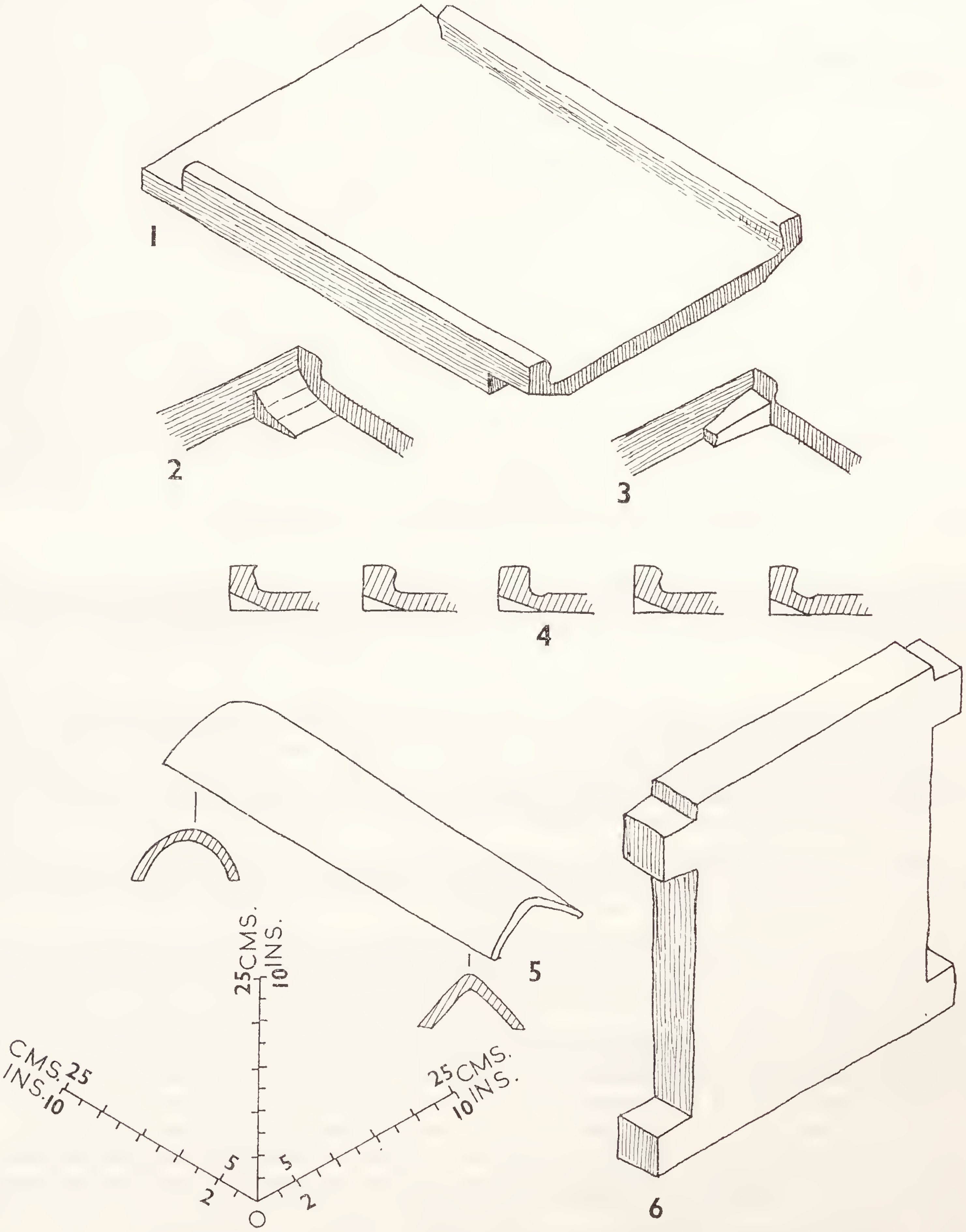

FIG. 3. Tile types manufactured at Grimescar.

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[6] Richmond, *op. cit.*, p. 58, Fig. 34.

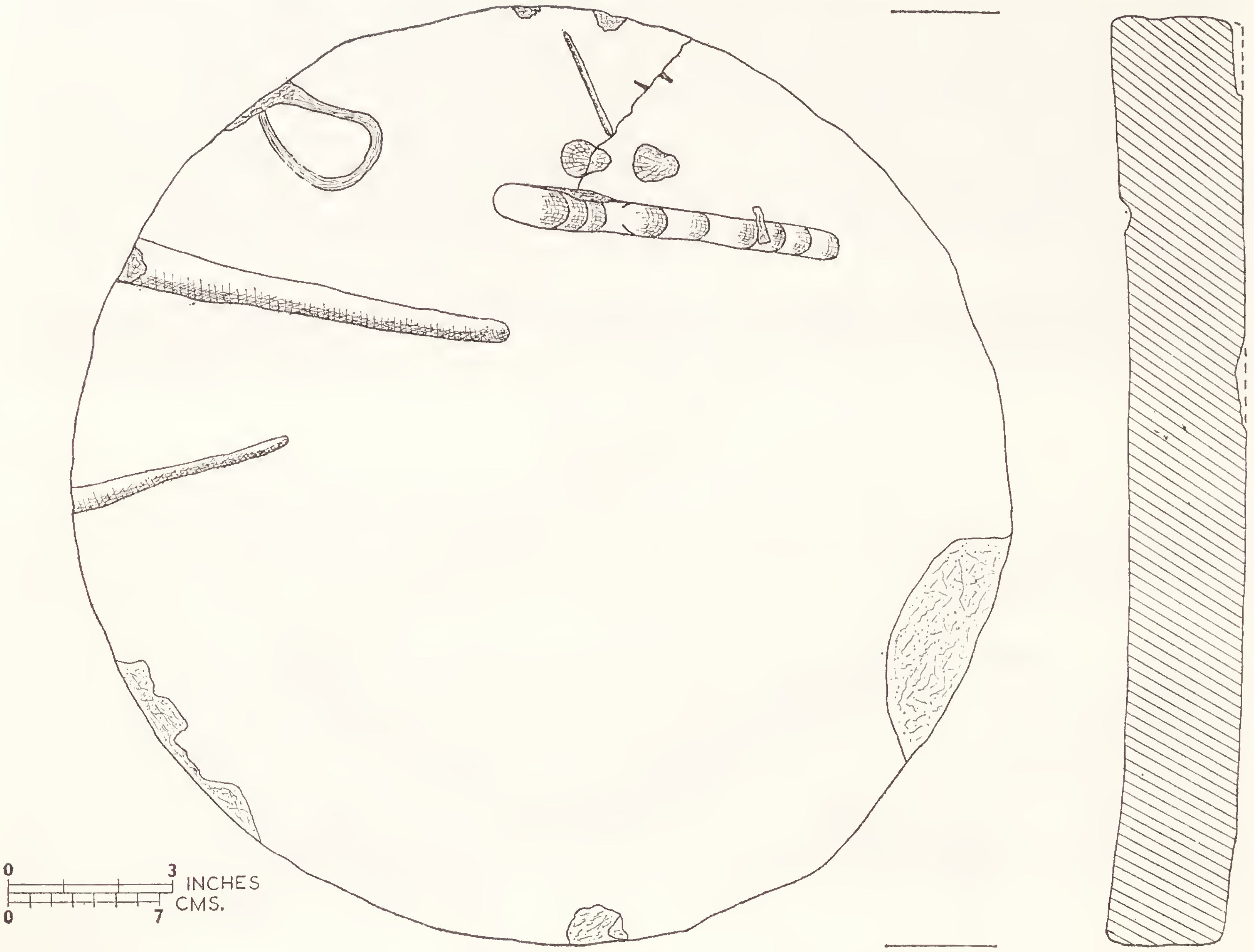

Fig. 4. Circular tile (Drawing by J. A. Gilks). (¼).

could be the particular tricks of the trade practised by individual tilemakers, the thickness of tile imply particular functions. The lighter tiles may have been intended for wooden building or alternatively the heavy tiles may have been required for the higher roofs on the exposed Slack fort site.

Building tiles

D. Tubuli—Flue-tiles, the box tiles well known at the Slack Bath-house are not positively represented at Grimescar, although the incised decorated fragments mentioned above may belong to this class. As these are a complicated shape to form and fire it might be expected that more would have been waste than in the case of simpler types. Production of flue-tiles does not appear to have been a major item at Grimescar, from the evidence available.

E. Pilae—flat, square, used at Slack to form the hypocaust pillars. Only a few fragments of these tiles were recovered at Grimescar; the thickness was 2 in. (5 cm.) and the two sizes of 7 in. (17.8 cm) and 11 in. (28 cm.) square were represented.

F. Pilae—circular. A single fragment of a circular tile was recovered from Trench E, diameter 18 in. (43 cm.) and 3 in. (7.6 cm.). A complete circular tile was discovered appearing through the surface near Trench E by Mr. J. A. Gilks of the Tolson Memorial Museum in 1966, the diameter is 16¾ in. (42.9 cm.) Fig. 4).

G. Voussoir tiles (Fig. 3. 6). Represented by numerous fragments from the tile dump in Area A; three complete examples could be reconstructed. These flat tiles taper in profile and have a square tenon at each corner. Three sizes are represented:—

1. 16 in. (43 cm.) long; 13 in. (33 cm.) wide; 3 in. (7.6 cm.) tapering to 2 in. (5 cm.) in thickness.
2. 14 in. (35.5 cm.) long; 12 in. (30.5 cm.) wide; 3 in. (7.6 cm.) tapering to 1¾ in. (4.6 cm.) thick.
3. Represented by a single fragment, length unknown; over 13 in. (33 cm.) wide and 3½ in. (9 cm.) thick at the top.

Many of these tiles show a shallow incised figure, like a letter 'C', on one face.

H. Floor tiles—flat rectangular. Several fragments and an almost complete example; 18 by 12 in. (45.5 by 30.5 cm.) and 3 in. (7.6 cm.) thick.

POTTERY (Fig. 5 and 6)

Coarse-ware pottery in orange-red and yellow fabric, similar to the tiles, was represented amongst the tile debris at Grimescar, and wasters demonstrate their manufacture at this site. These fabrics are well represented at Slack and the source has been established by the present excavation. The appropriate parallels in the 1922 report on the Slack excavations[7] follow the individual descriptions. The few sherds of dark grey and rusticated wares do not provide any conclusive evidence that these fabrics were manufactured at Grimescar.

Reeded-rimmed Bowls

1. Soft coarse brown, sandy grit. Three double grooves on the top of the ri m. Trench A2. (Slack, 1922, Fig. 79).
2. Pale orange buff, sand gritted. Trench A4. (Slack 1922, Fig. 78).
3. Hard over-fired purple to buff. Inverted rim. Trench B1.
4. Soft sandy buff. 7½ in. (19 cm.) diameter rim. Trench B1.
5. Hard sandy red with grey tones. Fragment of a second vessel of this profile. Trench B1.
6. Soft sandy buff. Trench B1.
7. Cream-buff ware, pink core. Trench C1 Layer 6. (Slack 1922, Fig. 79).
8. Hard sandy buff, 6½ in. (16.5 cm.). Trench B1.
9. Hard sandy buff, 6½ in. (16.5 cm.) diameter rim. Trench B1.
10. Soft red fabric, 9 in. (23 cm.) diameter rim. Trench B1.
11. Hard sandy orange. Trench E. (Slack 1922, Fig. 77).
12. Hardy gritty red. Trench E. (Slack 1922, Fig. 78).

Cooking Pots

13. Small jar, soft buff. Trench B1.
14. Small jar, soft orange-red. Trench B1.
15. Hard reddish orange, quartz grit. Trench A4.)
    (Hunter, Manby & Spaul, *op. cit.*, p. 90, Fig. 6. 5.
16. Soft orange. Trench B1.
17. Rim of a thick-walled vessel. Soft orange. Trench B1.
18. Hard thin orange fabric, dark reddish surface, burnished around the lower part of the body. Trench A6.
19. Hard sandy orange, grey-toned surface. Trench B1. (Slack 1922, Fig. 44 in a cream fabric).

Flagons

20. Flagon, Hard smooth red ware, fine sand grit. Reeded handle. Trench A3 and 4.
21. Rim, hard red, slightly warped. Fragment of a similar vessel. Trench B1. (Slack 1922, Fig. 114).
22. Handle, hard red with two grooves. Trench E. (Common at Slack).
23. Handle, soft buff, sandy. Trench B1.
24. Base, hard brown to grey, overfired. 3 in. (7.6 cm.). Trench A6.
25. Base, hard brown to grey, overfired. 3 in. (7.6 cm.). Trench A4.
26. Base, smooth hard dark-reddish-tile fabric. 3¼ in. (8.3 cm.). Trench A4 and 5.

Miscellaneous

27. Cheese press, smooth reddish-tile fabric. Perforations in the sides and base. Trench A4.
28. Beaker, outsplayed rim, medium soft buff. Trench B1.
29. Beaker, soft yellow-orange fabric. Trench B1.
30. Lid, 9 in. (23 cm.) diameter. Hard red, dark toned surface. Trench B1.
31. Lid, 9 in. (23 cm.) diameter. Soft red.
32. Lid, soft red fabric. Trench B1.
33. Lid, hard sandy buff-red fabric. Trench B1.
34. Lid, hard red fabric. Fragment of a second. Trench A6.
35. Rim of a large jar with outbent rim. Hard overfired red, purple toned surface. Trench E.
36. Dish with moulded rim, soft red ware. Trench A15.
37. Rim of a mortarium? 10 in. (25 cm.) external diameter, orange sandy fabric. Trench A2 and 6.
38. Shouldered jar, medium hard reddish to orange fabric, fine sand grit. Fragment of a second vessel. Trench E.
39. Shouldered jar, hard dark red, purple-toned surface. Trench E.

Dark Grey & Rusticated Wares

40. Base, medium hard light grey, rows of small applied pellets. Trench A11.
41. Sherd, harsh medium-hard light grey fabric. Linear rustication. Trench A11.
42. Sherd, medium-hard dark grey, linear rustication in a fine lighter clay. Trench C1, Layer 6, kiln stoke pit.

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[7] Dodds & Woodward, *op. cit.*, pp. 61–7.

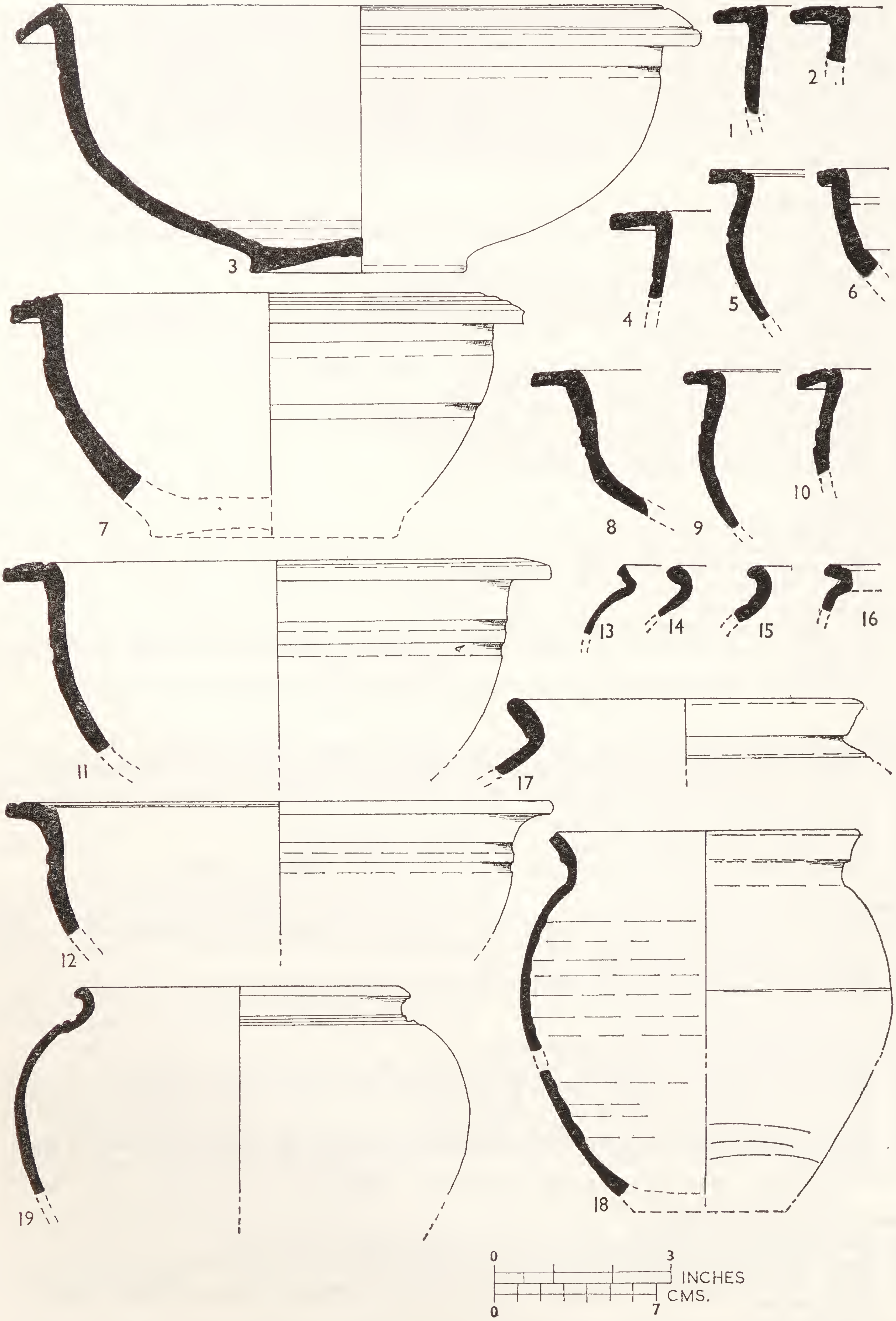

FIG. 5. Pottery from Grimescar. Reeded rimmed bowls and Cooking Pot. (⅓).

43. Jar rim, soft grey, dark surface. Trench D1.
44. Jar rim, soft light grey. Trench D1.
45. Base, hard light grey. Trench D1.

Kiln Prop

46. Orange-red tile fabric. Knife-trimmed base with tooling around the edge. Trench A13.

Discussion

The cohort stamps show that the Grimescar tilery was a military establishment operated by the Fourth Cohort of the Breuci and provided building material used at the Slack fort and Bath-house. The operation of the tilery must have coincided with the

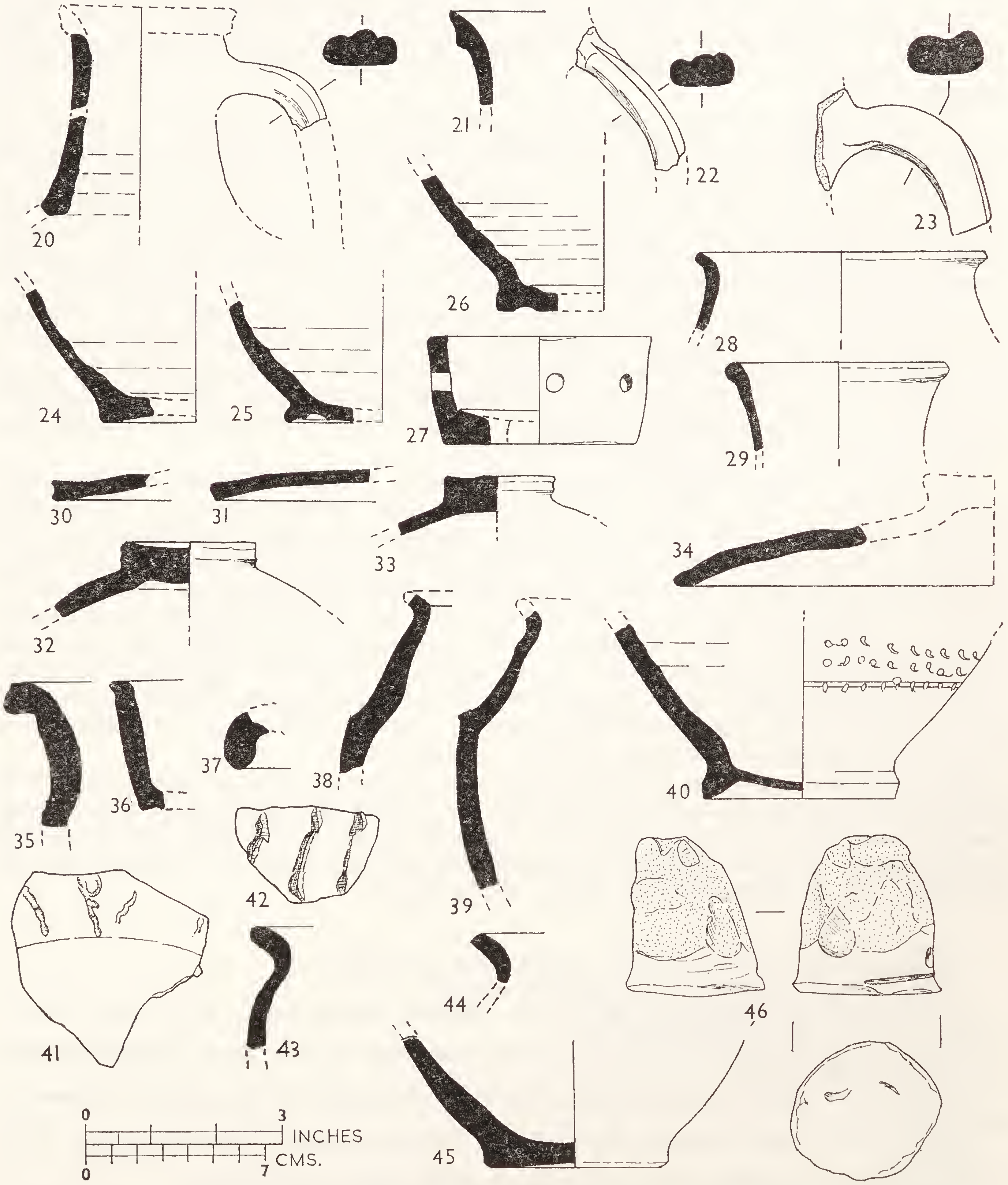

FIG. 6. Pottery from Grimescar. Flagons, lids, jars, rusticated and dark grey wares, kiln prop.

construction phases at Slack and the production of hypocaust elements: pila, box-tiles and voussoirs can only have been for the bath house. A few small chips of red tile were found in the shallow hollow beneath the stone pitching supporting the front of the rampart at Slack in Trench A/63.[8] Otherwise tiles are absent from the earliest layer within the fort but plentifully associated with the stone buildings attributed to the Trajanic reconstruction and with the later occupation layers. Fragmentary roofing and building tiles are widely scattered in the Annexe area and were used in the cemetery to the east where stamped tegulae formed tombs.[9]

Box tiles and pila were used in all three constructional phases at the Slack bath house. However no tiles used in the earliest construction are available for comparison with the Grimescar products. The tiles used in Room 1, attributed to the third constructional phase, circa A.D. 122, were certainly made at Grimescar, although no evidence to support this date of construction was found by the 1962 excavation.[10] The products of the tilery were used in both the Trajanic and Hadrianic reconstructions at Slack: the enlargement of the bath house in the Hadrianic period would have required large quantities of tiles.

The total number of kilns operating at Grimescar or their duration is unknown. The kiln excavated in 1955 may have been the 'archid cave' discovered in 1590 and it is possible that the feature likened to 'a roundwell' could have been a pottery kiln. The ash deposit in Area B must have been raked from a nearby kiln destroyed by quarrying, and the tile dump in Area A is too far removed to be the throw-out material from the 1955 kiln. As the tilery of an Auxiliary unit Grimescar has a close parallel in the arrangement of the Muncaster, Cumberland, tilery providing material for the fort at Ravenglass.[11] Both tiles and pottery were produced at this site and also at the tilery discovered outside the fort of Gellygaer, Glamorgan.[12] These Auxiliary unit tileries are small and unsophisticated in comparison with the Legionary tilery at Holt, Denbighshire, with its battery of six tile, and two pottery kilns. This establishment operated by the XXth Legion produced tiles and a very wide range of kitchen and table wares for use at the Chester fortress.[13]

The pottery types manufactured at Grimescar – bowls, flagons, cooking-pots, beakers and jars – must reflect the culinary needs of a military garrison. The reeded-rimmed bowls that form such a large item amongst the pottery at Grimescar are a well-known form on Roman sites of the First Century. The Grimescar bowls, and those at Slack, have hemispherical bodies and belong to Gillam's Type 215 and were in use in Northern England during the period A.D. 80–125[14] In Southern England this form was in use at Colchester from Claudian to Flavian times, and during and after the Flavian period the carinated version of the reeded rimmed bowl developed.[15] It is the absence of the carinated bowls, Gillam Type 214 in use in Northern England during the period A.D.100–130 , that is one of the notable features of Grimescar, and probably is an indication of the conservative outlook of the potters.

Pottery in the red and cream fabrics produced at Grimescar forms about one eighth of the ceramic material recovered by excavation at the Slack fort. The distribution of these wares extends over the whole area of the fort and contrasts with the fumed dark grey cooking-pots, dishes and bowls of the post-Hadrianic reconstruction occupation that are abundant only in the North-east quarter of the fort.[16]

[8] *Ibid.*, p. 76.

[9] Barber, F., 'On the Roman Station at Slack', *Y.A.J.*, I (1870), p. 6.

[10] Hunter, Manby & Spaul, *op. cit.*, pp. 80–3 and 95–7.

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[13] Grimes, W. F., 'Holt: the Works-Depot of the Twentieth Legion at Castle Lyons', *Y Cymmrodor*, XLI (1930).

[14] Gillam, J. P., *Types of Roman Coarse Pottery Vessels in Northern Britain* (Newcastle 1957), p. 23, Fig. 23.

[15] Hawkes, C. F. C. & Hull, M. R., *Camulodunum*, (1947), 265, pl. LXXX, 246.

[16] Hunter, Manby & Spaul, *op. cit.*, p. 80.

The location of the tilery cannot have been solely dictated by the presence of workable clay, as there are several localities nearer Slack where suitable clay occurs. At Salendine Nook, one mile east of the fort and beside the Roman Road, a good seam of clay exists that was exploited from the 16th Century down to the present day by the Morton family for pottery making.[17] The quality of tree growth on the high and exposed area around the fort may have resulted in the establishment of the tilery in the sheltered and well-timbered locality of Grimescar. The distance of the tilery from the fort was not as great as from Muncaster to Ravenglass, but there was the added disadvantage of the steep hillside between the tilery and the road running along the crest of the ridge.

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[17] Wray, D. A., 'The Mining Industry in the Huddersfield District', *The Naturalist* (1929), p. 237.

THE SYNOD OF WHITBY AND THE BEGINNING OF THE CHRISTIAN ERA IN ENGLAND

By Kenneth Harrison

To an ecclesiastical historian the Synod of Whitby represents a decisive step towards the dominance of the Roman Church in Britain.[1] There is, too, another aspect of the deliberations of this Synod that has not always received the attention it deserves. Many years ago R. L. Poole put forward the view that the Easter Tables of Dionysius – and, by implication, the notion of the Christian Era – were formally adopted at Whitby through the influence of Wilfrid, later Bishop of York, and perhaps of Benedict Biscop, the future founder of Wearmouth-Jarrow [16, pp. 32–3].[2] It is the purpose of this paper to suggest that Poole's opinion can be strongly supported by information that he did not develop, although contained in the *Historia Ecclesiastica* (*H.E.*) of Bede [15]. To begin with, however, it will be desirable to say something about the evolution of Easter Tables and how they came into use as a matter of practical convenience. Bede has preserved (*H.E.*, v. 21) a letter from his Abbot, Ceolfrith, to Naiton, King of the Picts, written at some time between 706 and 716 [15, ii, p. 331], in which the Abbot refers to the Patriarchs of Alexandria sending notification of the date of Easter to all the churches under their jurisdiction.[3] Then the Patriarch Cyrillus drew up a table predicting the date of Easter for ninety-five years, in five cycles of nineteen years (the Metonic cycle). This account of Ceolfrith's serves its purpose well, though the full story is naturally more complicated, and there were other sets of tables that enjoyed a limited circulation [8]. Again with a wish to secure uniformity, the Bishops of Rome also resorted to consultation and messages [17]; but as the Church expanded towards the northern boundaries of the old Roman Empire this custom of relying on personal contact became more hazardous, and no further from Rome than Gaul we find the Easter Tables of Victorius of Aquitaine, drawn up in 457, being endorsed by the Council of Orleans in 541 [8, p. 65]. Unfortunately they were not very accurate, and were based on uncanonical premises; but the notion of a predictable Easter was forwarded by Dionysius Exiguus, who put out better estimates for the years 532–626 inclusive, again in five cycles of nineteen years [10].

It is important to recognise, first, that the Victorian and Dionysiac tables usually gave the same date for Easter, and only occasionally diverged – with the consequence that they were often confused; and second, that the Papacy was rather wary of committing itself to any particular set of tables, and preferrred to retain the right of settling the date [8, p. 102]. The fact that the ostensible dispute at Whitby was between the Roman party, whose custom was to calculate Easter from the fifteenth day of the moon to the twenty-first, *luna XV* to *luna XXI* (inclusive), and the Celtic, which calculated from *luna XIV* to *luna XX*, must not be allowed to disguise another fact – that a decision in favour of *luna XV* excluded the reckoning of Victorius, which allowed Easter to fall between *luna XVI* and *luna XXII*, although he also allowed *luna XV*.[4]

Next we may enquire how the rival schemes of Victorius and Dionysius – there were no other serious competitors except a scheme adopted by the Irish, and brought to England, no doubt, by Aidan, which operated on an 84-year cycle [13] – were regarded at Rome during the first half of the seventh century. About the year 600, or a little earlier, the contentious Abbot of Luxeuil, Columbanus, wrote to Gregory the Great deploring the method of Victorius; as an Irishman he would prefer his native calculation. We do not possess Gregory's reply, if he made one [8, p. 65].[5] Pope Honorius I, probably writing in 628–9 [13], is thought to have recommended the Victorian system to the Irish. Yet the Dionysiac tables also seem to have been current among them [8, p. 91]; and the Irish-educated Bishop Tuda (died 664), Colman's successor to the see of Lindisfarne, had kept the Roman Easter, *catholicam temporis paschalis regulam obseruans* (*H.E.*, iii. 26).[6] Rather easier to interpret is Bede's preamble to extracts from a letter directed by the Pope-elect John IV, in 640, also to the Irish, *euidenter astruens, quia dominicum paschae diem a XVa luna usque ad XXIam, quod in Nicena synodo probatum est, oportet inquiri* (*H.E.*, ii. 19). It has been pointed out by Jones, although the case is not stated quite exactly, that this reference to the Council of Nicaea would appear to proceed from the Preface of Dionysius, in which the impression is conveyed of this earlier conciliar backing for his type of approach to the problem.[7] Poole [16, pp. 30–1] insinuates that Bede might have curtailed the letter because 'he may have found that it disagreed with what he had laid down, and in fact prescribed not *luna XV* but *luna XVI*.' On the contrary, the preamble just quoted shows that the Pope had defined the paschal limits as *luna XV* to *luna XXI*, as agreed at Nicaea; in short, the insinuation betrays a disregard for the text – thus Poole omits the words *quod in Nicena synodo probatum est*, which do not figure in the preface of Victorius – and, worse still, amounts to a slur on Bede's character.

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[1] By some the date of the Synod has been fixed to 663, but Grosjean [reference 3] has brought forward good evidence for 664.

[2] Professor Dorothy Whitelock, to whom as usual I am indebted for comments on this paper, points out that Benedict Biscop was probably not present at the Synod, and may not have taken a prominent role in the controversy – otherwise would not Bede, as his former pupil, have said so?

[3] Bede will doubtless have been consulted over the composition of this letter. Professor Whitelock has suggested to me that he may have derived his clear Latin style from Ceolfrith.

[4] The reasons for this double system are complex and of no account here; they are fully treated by Jones [8, pp. 65–8].

The stage is now set for Wilfrid's first visit to Rome. We learn from his biographer Eddius Stephanus that Wilfrid, then about twenty years old, after spending some time in Kent with Archbishop Honorius, set off for Rome in company with Benedict Biscop; they parted at Lyons, and on arrival, probably in 654 [15, ii, p. 317], Wilfrid received instruction from Archdeacon Boniface on many subjects, including *paschalem rationem, quam scismatici Brittanniae et Hiberniae non cognouerunt* [2, c. V]. If this remark, as might appear, is a reference to the Romano-Celtic controversy over the date of Easter, Eddius has become strangely muddled, for Wilfrid was raised under the Celtic observance at Lindisfarne, became dissatisfied, and therefore went to Canterbury and Rome to get clearer views. What Eddius is probably trying to say is revealed very clearly by Bede's account of the matter, perhaps derived from a meeting with Wilfrid himself (cf. *H.E.*, iv. 19) or, more likely, from Ceolfrith, who before he came to Wearmouth-Jarrow had studied at Ripon and had been ordained to the priesthood by Wilfrid [15, ii, pp. 317, 370]. Bede writes as follows: *cuius magisterio* [Boniface] *iiii euangeliorum libros ex ordine didicit, computum paschae rationabilem, et alia multa quae in patria nequiuerat* (*H.E.*, v. 19). It will be observed that Wilfrid learnt the correct *computation* of Easter, a larger matter than the *luna XIV-XV-XVI* controversy, with which he will have been perfectly familiar. Returning to Ceolfrith's letter (*H.E.*, v. 21) the sense of *computus paschae* can hardly be in doubt: *Hic autem, quem uobis sequendum monstramus, computus paschae decennouenali circulo continetur . . . . Cuius computum paschalis Theophilus Alexandriae praesul in centum annorum tempus Theodosio imperatori conposuit. Item successor eius Cyrillus seriem XC et V annorum in quinque decennouenalibus circulis conprehendit; post quem Dionysius Exiguus totidem alios ex ordine pari schemate subnexit, qui ad nostra usque tempora pertingebant.*[8] It surely must have been the Dionysiac system that Wilfrid learnt from Boniface, for Bede calls it the *correct* computation; certainly it cannot have been the Victorian, which he attacked in *De Temporum Ratione*, cc. XLII, LI [8].[9]

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[5] An earlier attack, by Bishop Victor of Capua, is in part quoted by Bede in *De Temporum Ratione*, cc. XLII, LI [8].

[6] This statement does not necessarily imply Dionysiac tables, though it probably does in view of Bede's use of the adjective *catholicam*, and in view of the geographical isolation of Ireland. We must not always expect to be furnished with precise details of usage, any more than a writer today would bother to inform a wholly serious audience that his life was regulated by the Oxford University Pocket Diary.

[7] *euidenter astruens . . . oportet inquiri* 'is a clear direct reference to the table of 616 [*sic*, meaning date of issue, though the table itself began in 627], the continuation of Dionysius' table [by Felix], for only that table was headed *in Nicena synodo probatum est*, or words to that effect' [8, p. 91, n. 5]. The text of Felix's preface, in the edition of Krusch [10], does not contain any such phrase, although the original preface of Dionysius has similar wording.

[8] See also Ducange, s.v. *pascha*, and *Thesaurus Linguae Latinae*, s.v. *computus*.

In discussing the transmission of Dionysiac tables, Poole [16, pp. 32–3] supposed that 'the manuscript' of Dionysius and of Felix was originally at the monastery of Squillace, and that it somehow become known to Wilfrid (or to Benedict on an earlier visit to Italy). Yet it is most improbable that the Dionysiac tables were confined to a single monastery [8, p. 73]. Moreover, these are not elaborate or massive texts; the original tables, with preface and explanatory matter, occupy only nineteen pages in the quarto edition of Krusch, while the preface of Felix – and his tables, had they been printed – would occupy barely seven [10, pp. 63 f.]. Although Wilfrid himself did not return to England until 657–8 [15, ii, p. 317] he might have despatched information at any time after 654, when Boniface taught him; but we can safely say that copies of these tracts – they scarcely deserve another name – could have been multiplied, and rapidly, in England from 658 onwards. Considering the very few cathedrals and large monasteries existing at this time – hardly above a score – any demand for Easter Tables would soon have been satisfied.[10]

Bede's statement that Wilfrid had not been able to learn the right calculation of Easter in England very strongly suggests that the Dionysiac tables were not known, even in Kent, before 654, and is to some extent confirmed by the scarcity of early records at Canterbury – for instance, we do not know for certain the year of Augustine's death. And it now becomes desirable to examine the dates *Anno Domini* given by Bede before 658, and to try to discover how he arrived at them. Much progress in this direction has been made by Jones [9] who, however, believed that Dionysiac tables were available to Paulinus, Bishop of York 627–33, and to others at an earlier period; nor did he take enough account of the luni-solar calendar described by Bede in *De Temporum Ratione*, c. XV, providing a reliable sequence of years [5]. Among other points Jones, like Plummer [15, ii, p. 227] laid stress on obits preserved in the ecclesiastical (Julian) calendar, called *annale* (*H.E.*, iv. 14), as furnishing the day and month of deaths; and on regnal lists, which from the free use of them made by Bede must have been based on a principle that he thought reliable, namely, the luni-solar calendar. With these sources in mind, together with the episcopal lists that Jones has rightly postulated,[11] we can examine the early events dated *Anno Domini*, first beginning with some items in the Recapitulation (*H.E.*, v. 24) at 538, since earlier material is beyond the scope of this paper, and many of the dates have been derived from such writers as Orosius.[12]

538, 540. Eclipses, which were shown by Levison [11, p. 136] to have taken place in the Mediterranean area. How Bede came by these records we cannot tell; he makes no use of them in the text. Levison suggests that they may have been derived from an Easter Table into whose margin the information had been copied from the Annals of Ravenna (*Consularia Italica*); Jones [9, p. 34][13] points out that the first eclipse took place only six years after the start of the Dionysiac tables (532), but we cannot be sure that these tables were being used *directly* for annalistic purposes at this time.

547. Accession of Ida; from regnal list (luni-solar calendar).

565. Columba settles at Iona. Linked by Bede with the ninth year of the Pictish King Bridius and with the accession of the younger Emperor Justinian, November 565 [15,

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[9] It is worthwhile to note a comment by Stenton on the Dionysiac system, that Wilfrid 'had probably become acquainted with it during his first Italian journey' [18, p. 186].

[10] The sees that can be reckoned as going concerns in 658 are Canterbury, Dorchester, East Anglia, Lindisfarne, Mercia and Rochester; even York and London had no bishops of their own. Of important centres such as St. Augustine's (Canterbury), Malmesbury, Whitby and Melrose there will have been about a dozen or so; Professor Whitelock would add *Icanho* (founded 654), perhaps Iken in Suffolk, which if not large was certainly influential.

[11] These lists, such as that for East Anglia (*H.E.*, iii. 20), sometimes furnished the length of tenure but not dates that Bede could convert into *Anni Domini*.

[12] An exception is the date assigned to the arrival of Hengist and Horsa, perhaps based originally on the luni-solar calendar.

[13] In what follows the more recent book by Jones [9] is quoted by page numbers only.

ii, p. 130]. The last Easter to be celebrated after the Irish fashion (715) was 150 years later than Columba's settlement (*H.E.*, iii. 4). Date derived *a traditione* and by calculation, though Bede may have had access to a Pictish regnal list.

We may now treat the various English kingdoms separately, from the beginning of the Augustinian mission.

Kent

597, etc. The dates given by Bede for the early stages of the Conversion and the death of Pope Gregory (which he seems to have miscalculated) are mostly based on the Imperial years of Mauricius and Phocas, and on Indictions. As Jones observes (pp. 46, 165) there is no trace of Dionysiac annals at this stage. We may note incidentally that Papal letters are dated, if at all in Bede's transcripts, by the Indiction with or without the Imperial year, and therefore need no comment.[14]

604. Augustine consecrates Mellitus to London and Justus to Rochester. Jones (p. 165) remarks that this is the only date *Anno Domini* connected with these bishops, though the death of Mellitus in 624 is recorded in *H.E.*, ii. 7; he suggests that the year 604 may be linked with the conversion of King Saeberht and the East Saxons (*H.E.*, ii. 3).[15] Possibly the consecration of Justus is ultimately derived from an episcopal list at Rochester (see under Northumbria, A.D. 625, below); it is by no means proof that Dionysiac tables were in use, and need not be a Canterbury annal in origin, as Jones would propose (p. 165), although Victorian tables are possible (p. 164).

616. Death of King Ethelbert, 24 February. Regnal list and obit; as the first English monarch to be converted he might well have been commemorated at Canterbury (Jones, p. 166).

619. Death of Laurentius, 2 February. Based on letters from Pope Boniface, which will originally have been dated by the Indiction (*H.E.*, ii. 7); also obit (Jones, p. 167).

624. Death of Mellitus, 24 April. Obit, with year calculated by Bede on the strength of letters from Boniface (Jones, p. 167).

640. Death of King Eadbald, son of Ethelbert and the Frankish princess Bertha. Year derived by Bede from a regnal list. This king had married his father's second wife and had refused baptism; soon afterwards, however, he put her away and was baptised (*H.E.*, ii. 6). He married the daughter of another Frankish king [15, ii, p. 88] and his conversion seems to have been sincere; but such a chequered career would hardly qualify him for a place in the ecclesiastical calendar, and it was his son who banned the worship of idols (*H.E.*, iii. 8). The day of his death, 20 January, is found only in the Salzburg annals [14; 18, p. 61] – which we may think curious, if Dionysiac tables were in regular use at Canterbury (see under 604, above). Yet with a Frankish mother and wife, and remembering that, apart from men, Englishwomen of royal descent were to be found in continental monasteries, including Eadbald's granddaughter Earcongota, who entered religion at Brie (*H.E.*, iii. 8), it would not be surprising if the day and month of his death had been written on the fly-leaf of a gospel book or preserved in some similar way. The information is considered reliable by Plummer [15, ii, p. 148] and there could be no reason for inventing it.

653. Death of Archbishop Honorius, 30 September. The date possibly derives from an episcopal list, but we are now so close to the time that Dionysiac tables could have been introduced that a retrospective entry cannot be ruled out.

655. Consecration of Archbishop Deusdedit. By textual emendation Grosjean [3,

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[14] We are at the moment concerned only with the use of Dionysiac tables, which does not mean that the story of the Augustinian mission in *H.E.* is free from difficulties. Professor Whitelock has kindly drawn my attention to a recent discussion by P. Hunter Blair, in *Settimane di studio del Centro italiano di studi sull'alto medioevo*, XVII (Spoleto, 1970), p. 197.

[15] It may be noted that the death of Augustine – with day and month only, 26 May, from an ecclesiastical calendar (*annale*) – brings this chapter to an end. The next is concerned with his successor Laurentius, who had been consecrated earlier in case Augustine should die. Are we meant to infer that 604 was the year of his death? Haddan and Stubbs adopted this date [4, iii, p. 4]; Jones (p. 166) thinks before 607.

p. 235] has arrived at the most likely date, Thursday, 12 March, which although occurring in Lent would be celebrated at Canterbury as the Feast of Gregory the Great. We may surmise, with Jones (p. 169) that, unless Bede made a calculation, records available from Canterbury included an episcopal list stating the interval of a year and six months between Honorius and Deusdedit.[16] Again we are reaching the time when Dionysiac tables could have become available.

Northumbria

603. Battle of Degsastan; there is no need to invoke, with Jones (p. 34), a monumental inscription because this engagement took place in the eleventh year of Aethelfrith (*H.E.*, i. 34), usefully fixed by the regnal list based on the luni-solar calendar. Such a list for Northumbria has been carefully investigated by Hunter Blair [1].

625. Consecration of Paulinus, 21 July.

644. Death of Paulinus, 10 October. There has been a good deal of dispute over these dates [12, p. 275]. For present purposes we need only suggest that Paulinus, who came to this country in 601 (*H.E.*, v. 24) could easily have remembered the episcopal years of Justus, and the short episcopate of Romanus, supposing them not to have been written down.[17] He could also have remembered that his consecration took place in Edwin's tenth year – or ninth, since we do not know from which moment in 616 the regnal years were counted – so the year could be ascertained from a regnal list; and, like Willibrord [19, p. 13] he surely will not have forgotten the day of his consecration, the eighth Sunday after Trinity in 625. His obit furnished the day and month of his death, which took place in the second year of Oswiu (*H.E.*, iii. 14), whose reign seems to have begun later than 15 November 642 [16, p. 46; 6].

627–33. The Paulinus records, then, do not require us to assume, with Jones (p. 174), that Dionysiac annals were current in the North or anywhere else; the evidence of Bede must be allowed to carry considerable weight, expert as he was in the *computus paschae*; and an episcopal list at Rochester is altogether a more likely source. Edwin's baptism, Easter 627, was an event of such importance that educated Northumbrians could hardly fail to transmit the date orally from one generation to the next, when it could have been entered into the tables of Felix, which began in the same year; the surrounding circumstances will mostly have been derived *a traditione*, and James the Deacon, the companion of Paulinus, survived at least until the Synod of Whitby (*H.E.*, iii. 25). The day of King Edwin's death in battle, 12 October, will have been recorded *in annale*, since he fell in a struggle against the heathen Penda; as to the year, the suggestion of Poole [16, p. 40] that Bede began his year on 1 September is not convincing [6; 12, pp. 265 f.] and Bede's figure 633, doubtless from a regnal list, should stand as against 632.

642. Death of King Oswald, also in battle against Penda, 5 August (*H.E.*, iii. 9; v. 24). Regnal list and obit [Jones, p. 178]. Reasons for thinking that the year is 642, and not 641, have been discussed elsewhere [6]. Accession of Oswiu; see under 644 (above).

651. Assassination of Oswine, 20 August (*H.E.*, iii. 14). Regnal list and obit, the latter presumably observed at the monastery of Gilling, near Richmond, founded in his memory. Aidan died 31 August in the same year (*H.E.*, iii. 14); episcopal list and obit from Lindisfarne.

Mercia

653. Conversion of the Middle Angles during the rule of Peada, sub-king under his father Penda (*H.E.*, iii. 21; v. 24). This is the first Mercian date in Bede, and he records that it happened two years before the Battle of the Winwaed (below). An entry in the Anglo-Saxon Chronicle, under 626, and purporting to date the accession of Penda as

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[16] In the Preface to *H.E.*, Bede acknowledges his debt to Abbot Albinus who transmitted *omnia quae . . . uel monimentis litterarum uel seniorum traditione cognouerat*; and it is very probable that an episcopal list formed part of the material, although not giving many particulars for the earliest days of the see.

[17] And he could consult the memories of people in Rochester and elsewhere. Only the years are known for his predecessors, not months or days. The information could have been transmitted through Canterbury.

well as to give his age, is highly suspicious [18, p. 81, n. 2]; we may agree with Jones (p. 48) that there is no evidence for Paschal annals in Mercia during the seventh century, although in the latter half there are indications of regnal and episcopal lists.

655. Battle of the Winwaed, 15 November, in Oswiu's thirteenth year, resulting in the defeat and death of Penda (*H.E.*, ii. 24; v. 24). This fitting end to the man responsible for the deaths of Edwin and Oswald will have remained long enough in memory for it to be recorded retrospectively in a Dionysiac annal, with the regnal year of Oswiu as a further check.[18]

Wessex

'Definite dates of any sort are lacking [in Bede at this time]' says Jones (p. 190). On the other hand, a number of dated notices of ecclesiastical events are found in the Anglo-Saxon Chronicle, the figures and much other information not being derived from Bede, from 634 onwards, when (or soon after) Birinus undertook his mission. He had been consecrated at Genoa (*H.E.*, iii. 7) and became the first bishop of Wessex, at Dorchester. He could have brought either Victorian or Dionysiac tables with him; but we must not overlook the luni-solar calendar, and it is a remarkable fact that the earliest *precise* date in these Wessex annals is a battle fought in 661 at Easter (28 March) – that is, about three years after Wilfrid's return from Rome, although the entry need not have been made in the same year as the battle. These seventh-century annals deserve further investigation on these and other grounds; on any showing they afford no evidence for direct entry into Dionysiac annals before 658.

East Anglia, Essex and Sussex

604. See above, under Kent. Although Bede secured material from genealogies, regnal lists and episcopal lists, apart from this solitary item he could not relate any of it to the Christian Era until the death of Ethelhere at the Battle of the Winwaed (above, Mercia).

To conclude, unless Bede is guilty of a serious mistake in linking the phrase *computus paschae* with Wilfrid's studies at Rome in 654 – extremely improbable, we may think – it cannot be far from the truth to recognise that Dionysiac tables could have become widely diffused in England about five years before the Synod of Whitby. The reasons for the choice of 664 for the Synod have been noted by Plummer [15, ii, p. 188] and discussed by Jones [7], although their arguments have no bearing on the content of this paper. What does emerge is that Poole's opinion receives strong support. It is true that Bede may not have been completely informed about Dionysiac influence in England – doubts about Wessex, for instance, have already been mentioned; but, generally speaking, the notion of the Christian Era seems to have been introduced by Wilfrid no later than 658, formally adopted at Whitby in 664, and for its subsequent triumph among annalists or historians, and in everyday use, had only to await the arrival of one man – Bede.

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[18] It should be mentioned that the Northumbrian regnal list examined by Hunter Blair states that Penda died in 654; but Plummer [15, ii, p. 185] notes that 655 agrees with the chronology of Wulfhere's reign, and so does Hunter Blair [1, p. 256].

[14] Pertz, G., *M.G.H. Scriptorum 1* (Hanover, 1826), p. 87.
[15] Plummer, C., *Baedae Opera Historica*, 2 vols. (Oxford, 1896).
[16] Poole, R. L., *Studies in Chronology and History* (Oxford, 1934).
[17] Scudamore, W. E., in *Dictionary of Christian Antiquities*, ed. W. Smith and S. Cheetham (London, 1880), p. 1562.
[18] Stenton, Sir F. M., *Anglo-Saxon England*, 3rd ed. (Oxford, 1971).
[19] Wilson, H. A., *The Calendar of St Willibrord*, Henry Bradshaw Society, LV (London, 1918).

EXCAVATION AT THE ARCHBISHOP OF YORK'S MANOR HOUSE AT OTLEY

By H. E. Jean Le Patourel and P. Wood

ABSTRACT

Traces of pre-conquest structures found on the excavated part of the archbishop of York's Otley manor house were not sufficiently substantial to represent more than outbuildings of a hall likely to have existed from an early date. A freestanding apsidal stone chapel succeeded the timber buildings and was itself incorporated late in the 12th century in a riverside range consisting of upper floor chapel and adjoining chamber. These are thought to form part of the archbishop's private apartments. The chapel was modified in the 13th century by the substitution of a square east end for the apse and the range was also lengthened westwards. After c. 1320 the manor was hardly used by the archbishop and the large and elaborate private chapel was altered in accordance with its reduced circumstances. Post-medieval occupation was not on a large scale.

Preface

A Leeds University extra-mural class in Otley undertook the excavation of a site threatened by the building of a new school. The Department of the Environment made a grant towards expenses. The work was done for the most part at weekends throughout the years 1968 and 1969. Members of the class responsible for the excavation were Pauline Barnes, Janet Best, Alec Chapman, Brian Dexter, Mary Hall, Roy Jones, Ronald Longstaffe, Tom Mallinson, Don and Lorna Mawson, Norman Nash, Enid Sheldon and Doreen Smith. Our thanks are due also to Elizabeth Exwood and Albert Whitaker and to many occasional volunteers.

I

THE HISTORY OF THE SITE

There are very few surviving documents that give any information about the manor houses used by the archbishops of York. During the middle ages there were some dozen of these in Yorkshire as well as 5 or possibly 6 elsewhere on the archbishop's estates, including a lodging in London. The number of houses in use at any one time varied but tended to diminish somewhat during the course of the 14th century. Scraps of information about them can be extracted from the archbishops' Registers[1] from the time of Gray onwards, but as a rule the entries do no more than give the bare fact of the existence of a house as the 'capital messuage' of a given estate together, if one is lucky, with the annual value of house and garden. Very occasionally there may be a bonus in the shape of a reference to building operations or to repairs, but these are only in the most general of terms. Surveys made on behalf of the central government when the see was vacant and, even more rarely, private surveys made on the archbishop's own initiative may add a few details, but when the sum total of the available evidence is considered it is very meagre indeed. On the other hand, because it was customary in the dating clauses of the acts in the registers to give the place as well as the day for each item of business transacted, it is possible to assess approximately the amount of time an archbishop spent at the various manor houses at his disposal. This in turn offers an indication, if no more, of periods at which major work is likely to have been undertaken – no archbishop, one supposes, would spend large sums on a house for the benefit of a reeve or bailiff. Itineraries constructed from the registers also show the times when a house was in constant or intermittent use, the periods at which it was regarded only as an overnight halt and the point at which it drops out of use by the archbishop altogether. (Fig. 1).

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[1] The registers survive from 1225 onwards with a short gap between 1255 and 1266. They have been printed by the Surtees Society up to the end of Greenfield's tenure of the see.

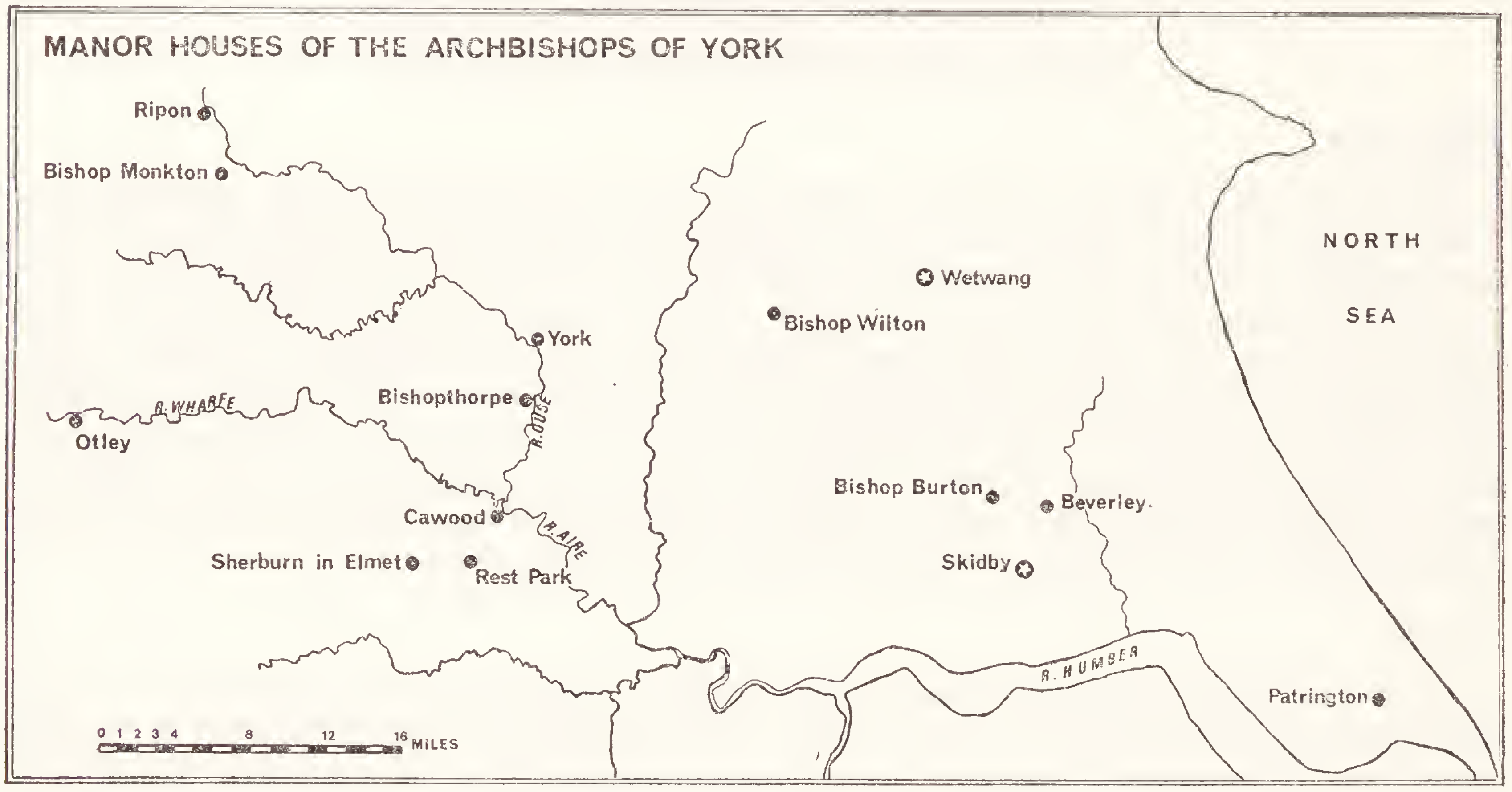

Fig. 1. Map to show archbishop's Yorkshire houses.
Wetwang and Skidby were not used during the period covered by Table I (p. 117).

The first recorded visit to the Otley house was in 1226.[2] Archbishop Walter Gray, or at least his steward, clearly took an active interest in increasing the value of the temporalities of the see and the Otley estate shared in the general improvements. Gray granted it a market and a fair, contributed spiritual encouragement towards the building of a bridge over the Wharfe and almost certainly increased his own revenues by founding a borough.[3] There is no way of telling what work, if any, he put in hand on the house itself which was already of considerable importance before his day. By 1307, when a thorough survey of the whole manor was undertaken by Roger de Blundeston for archbishop Greenfield,[4] house and garden were worth 20*s* a year. Ten years later the town and its neighbourhood and probably the manor house were badly damaged by Scottish raids. Melton excommunicated the Scots for their ravages, mentioning in particular damage at Ripon and at Otley.[5] Some of this was made good, for in 1321 he ordered the repair of the kitchen[6] under the supervision of the vicar of Otley and again in 1334[7] ordered the steward to proceed with repairs at a cost of £20 – no very great sum in the circumstances. Yet the manor house was still valued at the 1307

[2] James Raine (ed.), *The Register or Rolls of Walter Gray, lord archbishop of York,* Surtees Soc. LVI, (1872), p. 13.

[3] The evidence for this is circumstantial but reasonably convincing. Gray gave markets and fairs to Sherburn and Otley (1227) and to Brough on Humber (1239). Burgesses of similar date can be traced both at Sherburn and Brough and a record of the borough grant survives in both cases. The size of borough plots (width 28 ft.) is similar at Otley and Brough and the rent at both places 4*d.* No trace of the borough grant at Otley survives though the borough was flourishing in the early 14th century. A heading in the *York Cartulary* (BM. Landsdowne 402) might possibly refer to the land on which the borough was situated but unfortunately it refers to one of 40 charters missing from the cartulary.

[4] Y.A.S. MS MD 130. A translated version with many omissions has been published by E. T. Cowling *The Extent of Otley 1307*, (1965) obtainable from the Otley Archaeological and Historical Society.

[5] James Raine (ed.), *Historical Papers and Letters from the Northern Registers,* Rolls Series, 1873, pp. 277 and 295.

[6] W. H. Dixon (ed.), *Fasti Eboracenses,* Vol. I (1863), p. 427.

[7] *Ibid.*, p. 433.

figure in a general survey of the archbishop's property made for the king in 1340,[8] and the sum at which it was valued was very high indeed compared with that of most of the other manor houses.

After the Scottish raids the archbishop made very few visits to the Otley house. Melton stayed at it on four occasions, but each time for a day only. Since he spent money on the manor he may have intended to rehabilitate it, but this can have come to little, for his successors throughout the following century and a half dated just three of their acts from Otley, once in 1343 (Zouche), once in 1356 (Thoresby) and once just after the turn of the following century (Scrope, 1402). On none of these occasions could it be said with certainty that a night had been passed at the house, though it seems probable that this was so. It could be suggested that this neglect of Otley might be due partly to changing social custom and to alterations in the arrangement of diocesan business leading to the use of fewer houses and to a more stationary life for the archbishop. Certainly there is a tendency in this direction, but such an explanation does not entirely explain the facts. For while it is true that more use proportionately was made of Cawood and Bishopthorpe, and while the manor houses at Wilton, Sherburn, Patrington and Burton dropped out of the itinerary one after the other, new houses were also added. Rest Park was built late in the 14th century,[9] and both Bishop Monkton and the Ripon house saw more use in the 14th century than they had enjoyed at an earlier date. It has been said that Bowett made considerable use of Otley during the early 15th century, and that he rebuilt the manorial kitchens.[10] Examination of the register, however, shows that there is no record of his ever visiting the house while he was archbishop and it seems likely that there has been some confusion with the work done on the house in the previous century. The following table shows that the Otley house was not used a great deal at any time for which there are surviving registers, but that it was hardly used at all after the Scottish raids of 1317–18.

Table I[11]

Name of Archbishop	Temporalities held	No. of years	No. of days at Yorks. manors	No. of days at Otley	% of time in Yorks. spent at Otley	Average No. of days per year at Otley	Average No. of days per year in Yorkshire
Gray	1225–55	31	308	33	10.7	1.1	9.9
Giffard ..	1266–76	11	164	6	3.65	.5	14.1
Wickwane ..	1279–83	5	358	6	1.7	1.2	71.6
Romayne ..	1286–96	11	1082	29	2.7	2.6	98.4
Newarke ..	1296–99	4	196	10	5.1	2.5	49
Corbridge ..	1300–04	5	742	38	5.1	7.6	148.4
Greenfield ..	1306–15	10	1533	67	4.4	6.7	153.3
Melton ..	1317–40	24	2467	4	.2	.2	102.8
Zouche ..	1342–52	11	914	1	.1	.09	83.1
Thoresby ..	1353–73	21	1446	1	.07	.05	68.85
Neville ..	1374–88	15	338	0	0	0	22.5
Arundel ..	1388–96	9	5	0	0	0	.5
Scrope ..	1398–1405	8	281	1	.35	.1	35.1

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[8] P.R.O., C. 145/140/7.

[9] For the circumstances see H. E. Jean Le Patourel, *The moated Sites of Yorkshire,* Soc. for Medieval Archaeology, Monograph Series, No. 5 (1973), pp. 37-49.

[10] The story originates in an anonymous 16th century continuation of Thomas Stubbs' *Chronicle of the Archbishops of York* in J. Raine (ed.), *The Historians of the Church of York and its Archbishops,* Vol. 2 (Rolls Series 1886), p. 433. For this reference I am grateful to Mr. C. B. L. Barr. If the story is reliable it is probable that the rebuilt kitchen was the great kitchen, used for the archbishop's servants, rather than the privy kitchen which served his personal needs.

[11] The early part of this table is based on figures supplied by Mr. B. Dexter from the published registers. The work on the unpublished registers was done by Mrs. M. Pickles and Mrs. M. Hall, with help from other class members. For help with Melton I am grateful to Professor R. Hill.

The house cannot, in fact, be traced during the century and a half after Scrope's death. There is a detailed survey of farms and leases of the archbishop's Yorkshire properties taken soon after Wolsey's death in 1530.[12] It makes no mention of a house at Otley, though it includes a number of leases of arable and pasture as well as the Otley mills. This must be significant because the document elsewhere gives either an inventory for houses in occupation or a rent for the herbage of the *situs manerii* of those which had been abandoned.[13] If the house was neither leased out as a capital messuage, nor the site for its value as grass, the most likely interpretation of the silence is that Otley was kept in hand as a reeve's manor, with all that that entailed by way of contraction of accommodation. Such an interpretation is the more probable because buildings, the stub perhaps of the former manor, must have survived since they were leased out a century or so later (see appendix, p. 141).

To return to the 14th century when there were still very occasional archiepiscopal visits to the house, the most difficult fact to explain is the high valuation of house and garden at Otley in comparison with that of other houses. Table II shows the position in 1340.[14]

Table II

Values for capital messuages within the county

Cawood	13/4	Burton	13/4
Beverley	6/8	Wetwang	6/8
Sherburn	3/4	Skidby	6/8
Patrington	10/–	York palace	20/–
Wilton	10/–	Otley	20/–
		Ripon	26/–

The disparity between the valuation and the amount of use made of the house seems to require explanation. There are two possibilities: first, the valuation of these manor houses normally includes what is called 'fruit of garden' and this may on occasion be quite high,[15] and may also include the 'herbage round the court', which was presumably used for grazing. While this sort of inclusion may often account for differences in value otherwise difficult to explain, it is not completely convincing in the case of Otley whose perlieus are not unduly large in comparison with those of, for example, Cawood or Wilton, and whose soil is not particularly fertile compared with that of the Vale of York. The second possibility is that Otley's heyday lay rather in the 12th century, before there are extant registers to show the archbishops' movements. Medieval valuations once made usually continue unrevised for a very long period, and this one may refer to a time when it reflected the realities of the situation. If this hypothesis is correct it would imply rapid reconstruction of the manorial buildings following the devastation of the 11th century. The excavation, limited in extent as it was, goes some way to justify such an interpretation.

If evidence for the medieval manor house and its successor is scrappy, the case for a pre-conquest house must be deduced from evidence that is entirely circumstantial. Nevertheless, it is a case that must be presented since there is good reason for supposing that an early manor house existed, and some reason for thinking that elements of it were found during excavation.

At the time of the Domesday survey the archbishop held 3 estates in the West

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[12] P.R.O., SC 6/766.

[13] Bishop Wilton, Bishop Burton and Wetwang, the latter probably always a reeve's manor.

[14] From P.R.O., C 145/140/7. There is no surviving valuation for Bishopthorpe at this time although it was one of the more frequently used manors.

[15] For example, the valuation of Cottingham in 1282 is broken down into houses 30/– if entirely let to any tenant, herbage and fruit and garden 60/– and fishery of moats 66/8 (Yorks. Arch. Soc. Record Series XII (1892), p. 239).

Riding. Of these Ripon was given to the see in the 7th century,[16] Sherburn came into the hands of the archbishop by a roundabout route late in the 10th century[17] but of the origins of the Otley estate there is no record.[18] In a survey of the early 11th century[19] it appears as a typical example of the large discrete manor, with inland in Otley itself and in some of the nearer dependent townships and with sokeland scattered over a fair area. The approximate size of the estate can be worked out by collating the townships mentioned in one or more of the 3 available documents[20] (Fig. 2). Neither the Wharfe nor the Washburn which flowed through its centre were navigable and though it was crossed by 2 Roman roads and a third might be considered its northern boundary, the roads were largely ignored by the constituent townships which were separated from them and from each other by areas of woodland and waste.[21] The exception is Ilkley which lay at a road junction, the site of a Roman fort whose walls were still standing in part until well into the middle ages.[22]

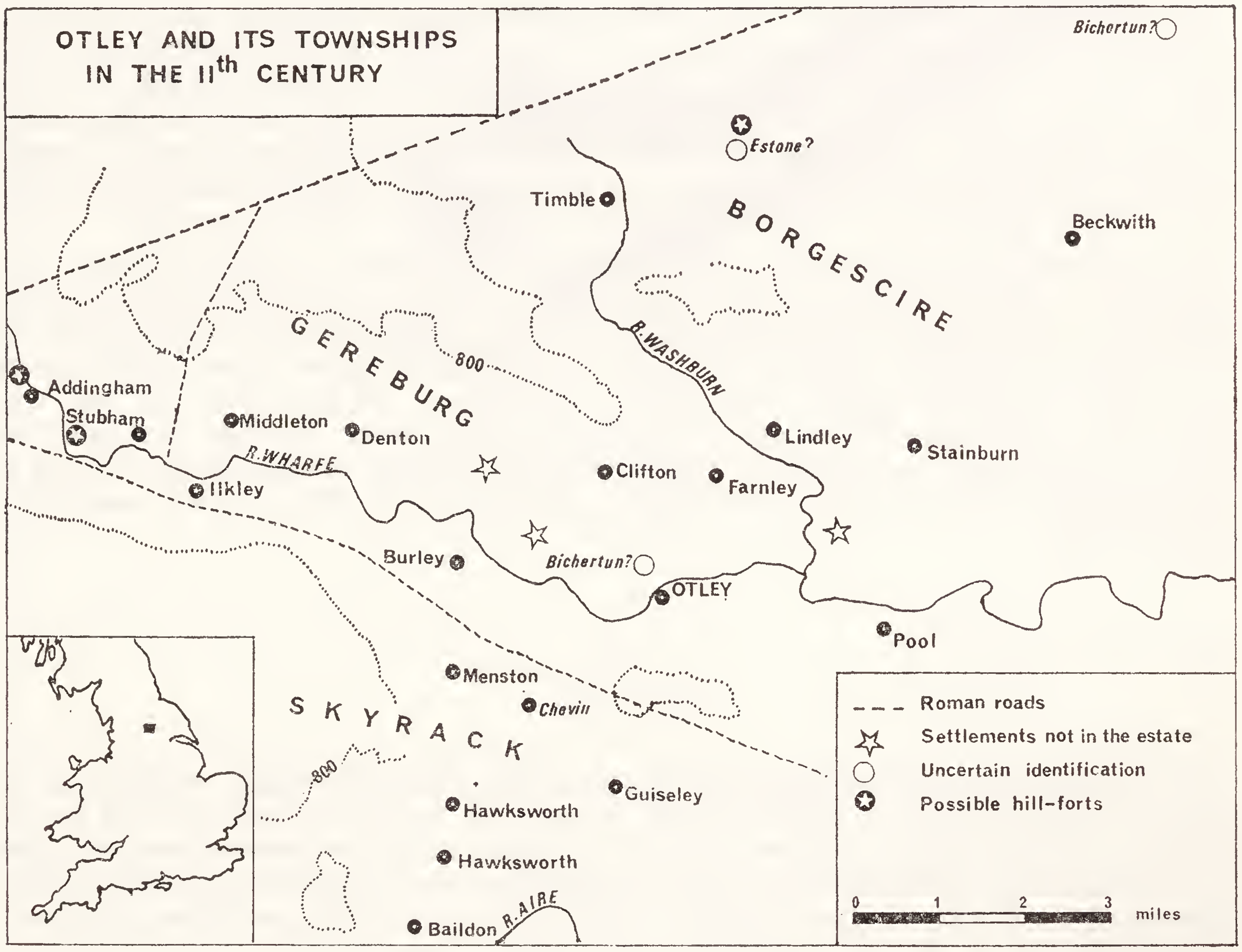

FIG. 2. Wharfedale estate in the 11th century.

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[16] B. Colgrave, *The Life of Bishop Wilfrid by Eddius Stephanus* (Cambridge, 1927), p. 17.

[17] W. Farrer, *Early Yorkshire Charters*, I (Edinburgh, 1914), pp. 18–25.

[18] There is a local tradition that Otley was an Athelstan grant but this grew up late. The archbishop in his reply to the *Quo Warranto* inquisition of 1279 made a distinction between Beverley and Ripon 'given by Athelstan' and the other properties, including Otley, that he had held *a tempore quo non extat memoria.* W. Illingworth (ed.), *Placita de quo Warranto.* Record Comm. (London, 1818), p. 224.

[19] The survey is discussed in W. H. Stevenson, 'Yorkshire Surveys and other 11th century documents in the York Gospels', *Eng. Hist. Rev.*, XXVII (1912), pp. 20–5.

[20] That is the survey in Note 19, Archbishop Osweald's complaint about his lost vills (A. J. Robertson, *Anglo-Saxon Charters* (Cambridge, 1939), pp. 110–113) and Domesday Book.

[21] The area of woodland in Domesday is very high in relation to that of the estate. Field names taken from the tithe award maps and from early estate maps show *intakes* and *allotments* between the townships, indicating late assarting. In some few cases an uncleared scatter of surface boulders shows virgin woodland to this day.

[22] The western wall of the late medieval 'manor house' rests on the Roman Wall and is aligned with it. The church is sited over the *principia.* Two such situations can hardly be pure chance.

It is possible to push back the existence of this Otley estate well beyond the first specific mention of it late in the 10th century. Archbishop Osweald complained that a number of settlements had been taken from Otley, among which he listed Addingham.[23] It was to Addingham that Archbishop Wulfhere fled from York in 867.[24] The most plausible explanation of this incident is that he was in fact retiring to the most remote of his own estates – Addingham is the most westerly of the Otley townships just as Otley was the most westerly of his properties. But Otley must have been a religious centre even before this, for a remarkable series of crosses, the earliest of 8th-century date, have been found in and around the present church.

They are of sufficient number and quality to indicate the existence of an old minster, or possibly, as has recently been suggested, of a monastery in the stricter sense of the word.[25] All this suggests that the association of settlements comprised within the Otley estate extends back in time to very early Anglo-Saxon days, perhaps even further, for it has been argued that such large groups of dependent vills, grouped round a central settlement, are Celtic survivals[26] and this may well be true of Otley.[27] The region was not in any case brought under Anglo-Saxon rule until well into the 7th century.

The point of this argument is to show that an estate such as this must have had seignorial buildings at its central settlement. At the very least buildings relating to the exploitation of the estate and the storing of its products were necessary; so too, buildings for the accommodation of clerks or monks. It is difficult to believe that there was not also a hall to provide against visits of the archbishop and his train. No hall was mentioned in the Domesday survey, but much of the estate was still waste at that time, its value reduced to a third of what it had been before the devastation. There is every probability that an early house existed; it remained to be proved that it was on the threatened site.

II

THE SITE

The excavated area was situated on heavy boulder clay, on a bluff overlooking the later river crossing, with an artificial bank bounding it to the west which could not be properly examined (Fig. 4). There was little doubt, even before excavation, that this was the site of the medieval house. The identification was supported by place names, documentary indications, local tradition and trial trenches dug on several previous occasions.[28]

On the other hand the normal position of an early manor house is in close proximity to the church. Such a relationship could be demonstrated at the pre-conquest estates at Ripon and Sherburn, at the palace north of York minster as well as on most of the early medieval manors belonging to the see. The church at Otley, however, was on rising ground some distance south of the manor house, and with the triangular borough situated between the two (Fig. 3). The church itself should be in its original position; for though like the manor it is founded on boulder clay, the pre-conquest crosses all

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[23] Robertson, *ubi supra* (Note 20).

[24] T. Arnold (ed.), *Simeon of Durham,* I, Rolls Series (London, 1882), p. 225.

[25] R. Cramp, 'The position of the Otley Crosses in English Sculpture of the eighth to ninth centuries', *Kolloquium über spätantike und frühmittelalterliche Skulptur,* Band II (Mainz, 1971), p. 56.

[26] G. R. J. Jones, 'The multiple estate as a modal framework for tracing early stages in the evolution of rural settlement', in F. Dussart, *L'Habitat et les paysages ruraux d'Europe* (Les congrès et colloques de l'université de Liège, LVIII (1971), pp. 254–64.

[27] Apart from the general probabilities discussed in Jones, *op. cit.* in Note 26, the survival of a vill with the Celtic name *Chevin* until the 11th century and the use of the word *cyfrum* (presumably a latinised form of the Welsh *cyfran*) to describe the lord's share of sheep on the moor in a medieval survey of Otley (see Note 4) might be taken as evidence for the Celtic origin of the estate.

[28] Excavation by Mr. T. E. Cowling in the post-war period, though not on a large scale, and a trial trench in 1967 by Mr. P. Mayes.

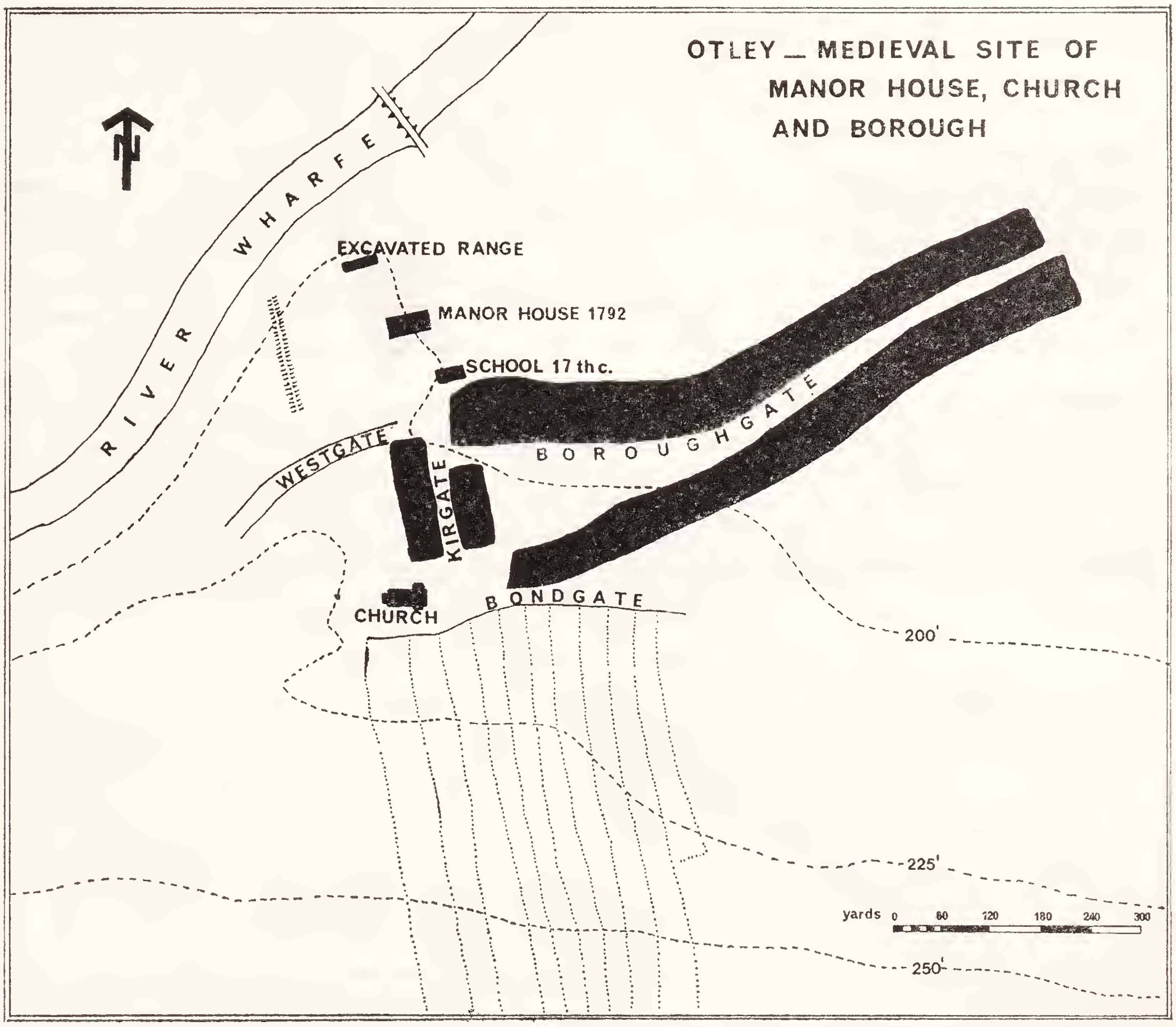

FIG. 3. Otley showing relative positions of manor house, borough and church.

came from its immediate vicinity. The excavated site produced incontrovertible evidence of early occupation. Whether this was seignorial or not it is not so easy to be sure.

The excavation was limited to one range only of a much larger building, probably consisting of several incompletely integrated units, which extended southwards towards the present town. The topographical information in the 16th-century lease (p. 141 below) indicates that the excavated area is likely to have been at that time in either the orchard or the part of the leasehold designated as pasture and it is true that the unpretentious buildings of post-medieval date found on the site would be consistent with use as a gardener's cottage or the like. Heavy foundations were seen when the present manor house was built in 1792;[29] others were observed in the new school's foundation trenches and yet others in the test holes dug for the architect south of the school. The indications in the inventory (p. 141) show that there must have been further elements of the house in the latitude of the old grammar school (Fig. 3). All this indicates that the medieval manor house must have covered a very extensive area.

III
THE EXCAVATION

Phase I: Figs. 4 and 5 and Plate Ia

The earliest feature on the site consisted of substantial numbers of stakeholes and small postholes. They were dug into the natural clay from which their filling differed

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[29] E. Baines, *Directory & Gazetteer of the County of York*, Vol. I (Leeds, 1822), p. 230.

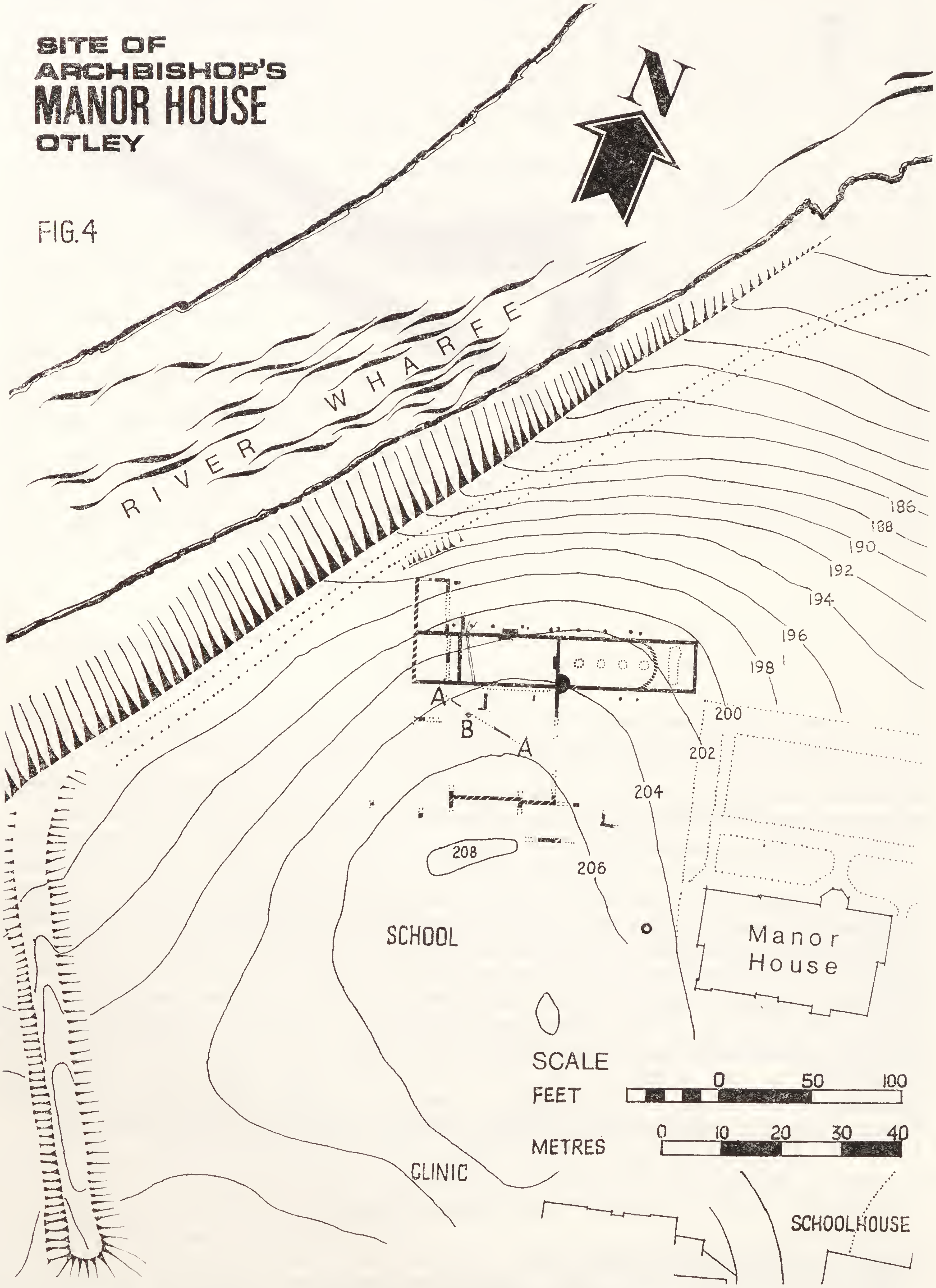

FIG. 4. General plan of site.

in consistency but not in colour. It was clear that the building or buildings of which they formed part were not completely contained within the excavated area. There were several concentrations of small stones at the top of the natural clay which might indicate a floor, but these were erratic in their distribution. There was no build-up of occupation debris, but a few sherds of early pottery, notably those in Fig. 10, nos. 3, 4 and 6 were found resting on the old ground surface, but not in areas where a build-up of clay separated the stake holes from the succeeding phase. Probably contemporary with the stakeholes was a single post-hole (Fig. 4, B) lying south of wall AA and stratigraphically earlier than the wall. It was just over 3 ft. wide at the top, tapering to 10 in. at 18 in. below the old surface. It appeared to have contained unsquared timber. In the filling of this post-hole and on top of the clay from which it was cut were two joining sherds of Middle-Saxon pottery (Fig. 10, I).

While the buildings represented by the stakeholes are unlikely to have been of any great size, feature B, if it was a post-hole, should belong to a substantial structure. Unfortunately any building to which it could belong would continue into the area where excavation was not allowed by the developer. No further evidence of occupation of comparable date was seen in the school foundation trenches in this area. The possibility of further work in the future to determine the nature and character of the more northerly of these buildings does, however, remain.

Phase 2: Figs. 4 and 5 and Pls. Ia and Ib

At the east end of the excavated area, sometimes separated from phase I by a layer of clay between 1 and 2 in. in depth, sometimes without intervening clay, were trench-built foundations of an apsidal building measuring 51 by 22 ft. internally, overlooking the river, but not precisely parallel to its present course, its long axis lying approximately east-west. The foundation trench was 3 ft. 6 in. wide and just over a foot deep at its most substantial, the width of the wall proper, 3 ft. No adjustment was made in depth of foundation to allow for the slight northward slope of the ground. Probably in consequence of this the southern foundation was more fragmentary than that to the north, though the unmortared river cobbles of which it was formed were in themselves considerably larger to the south (Fig. 9). The trench was laid out to a regular form and was continuous round the building save in area C-c where it was replaced by a row of very large stones without underlying cobbles. A layer of silty clay was interposed between the cobbles and the wall proper. The latter survived sporadically round the building as a course of gritstone boulders, rough dressed on the external surface only, very varied in shape and size and with a core of small rubble. It was entirely destroyed over the course of the apse and at both the western corners of the building.

Within the building the hard packed clay contained a quantity of small pebbles, but no other signs of occupation, and although no remnants of flagging were recovered, it seems probable that the stony clay formed a base for a flagged floor. There was no feature either inside or outside the building that could be interpreted as a stair base, and neither roofing tiles nor nails could be positively identified as belonging to this phase.

Probably contemporary with the apsidal building, though it could not be stratigraphically related to it, was wall Aa in Fig. 4. This consisted of a single course of rough dressed masonry with rubble core over foundations of river cobble of much the same character as those of the apsidal building. The building to which it belonged was orientated without regard either to the apsidal building or to the later medieval complex, and can only have belonged to a period when the manor house consisted of a number of detached elements.

There were several indications that the excavated building was the archbishop's domestic chapel. Its apsidal end, its east-west orientation, the position of the door towards the west end of the south wall, the later development of the building and the lack of associated occupation debris throughout its history all combined to support such an identification. It was free standing at this time for the walls beyond its west end were stepped up and of a different character and as we have seen there was no stair-base to indicate an upper floor. Nor was there an entry through the west wall.

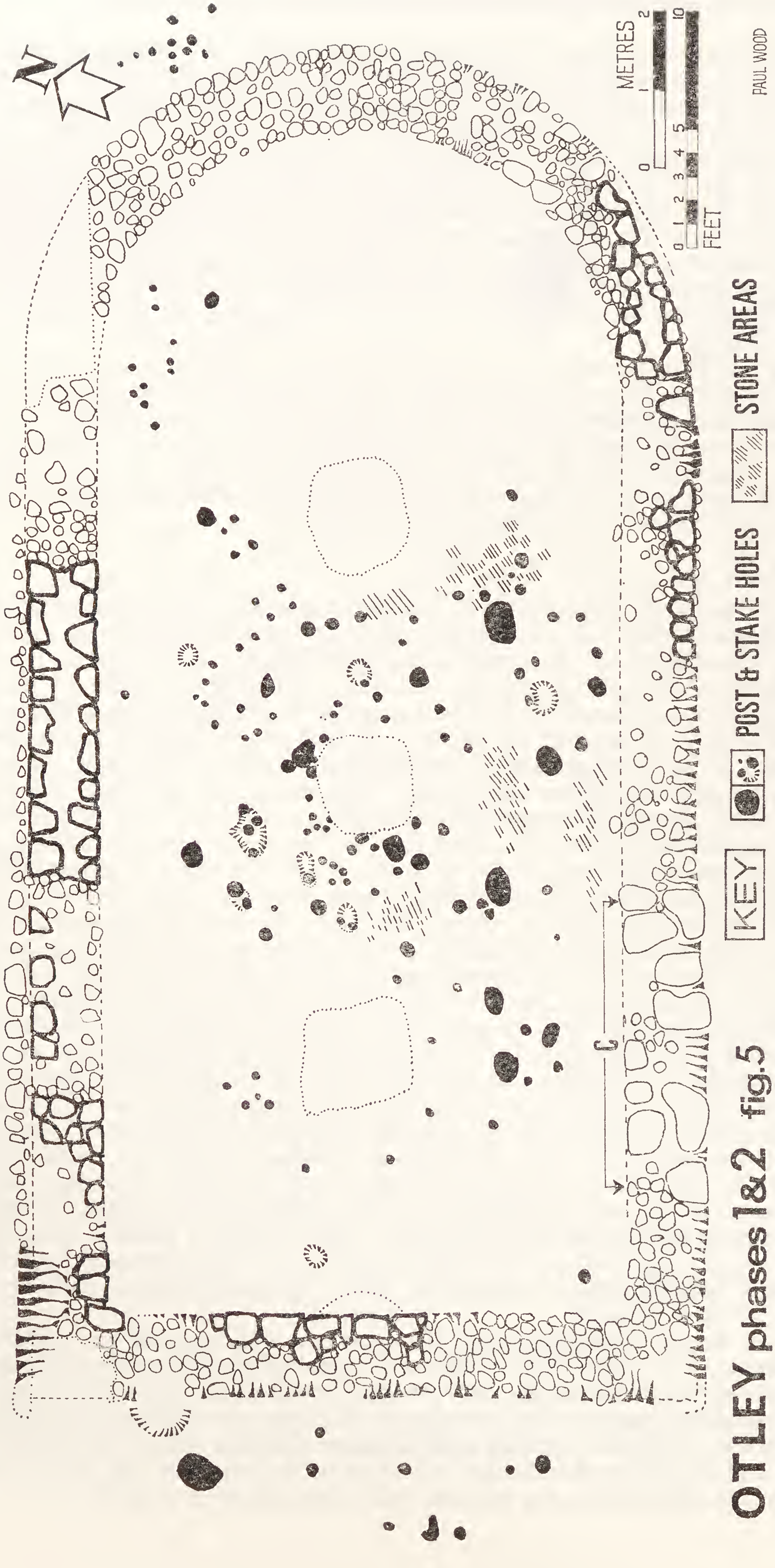

Fig. 5. Excavation phases 1 and 2.

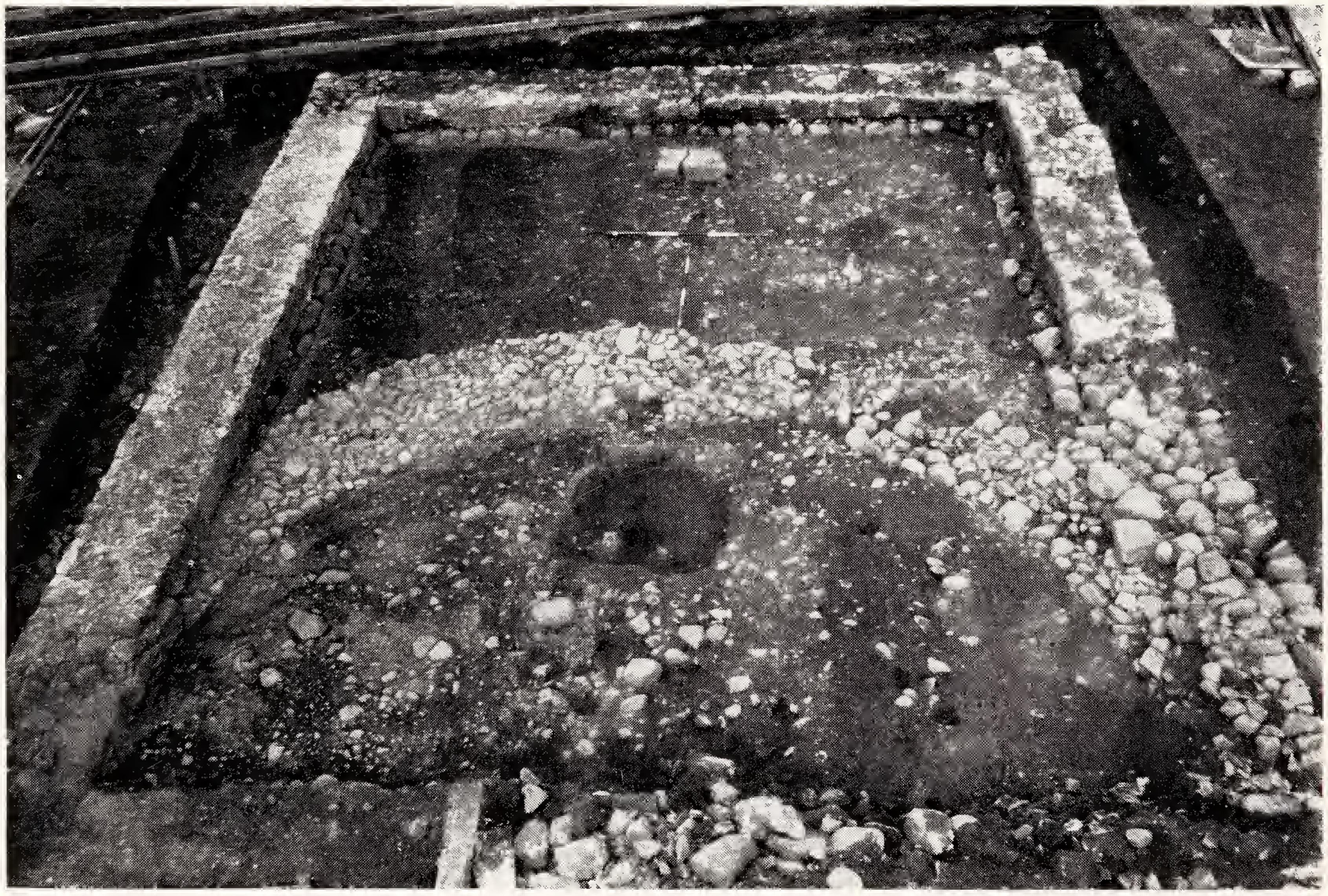

Plate Ia. East end of building showing apse and square east end. *Ph.* Enid Sheldon

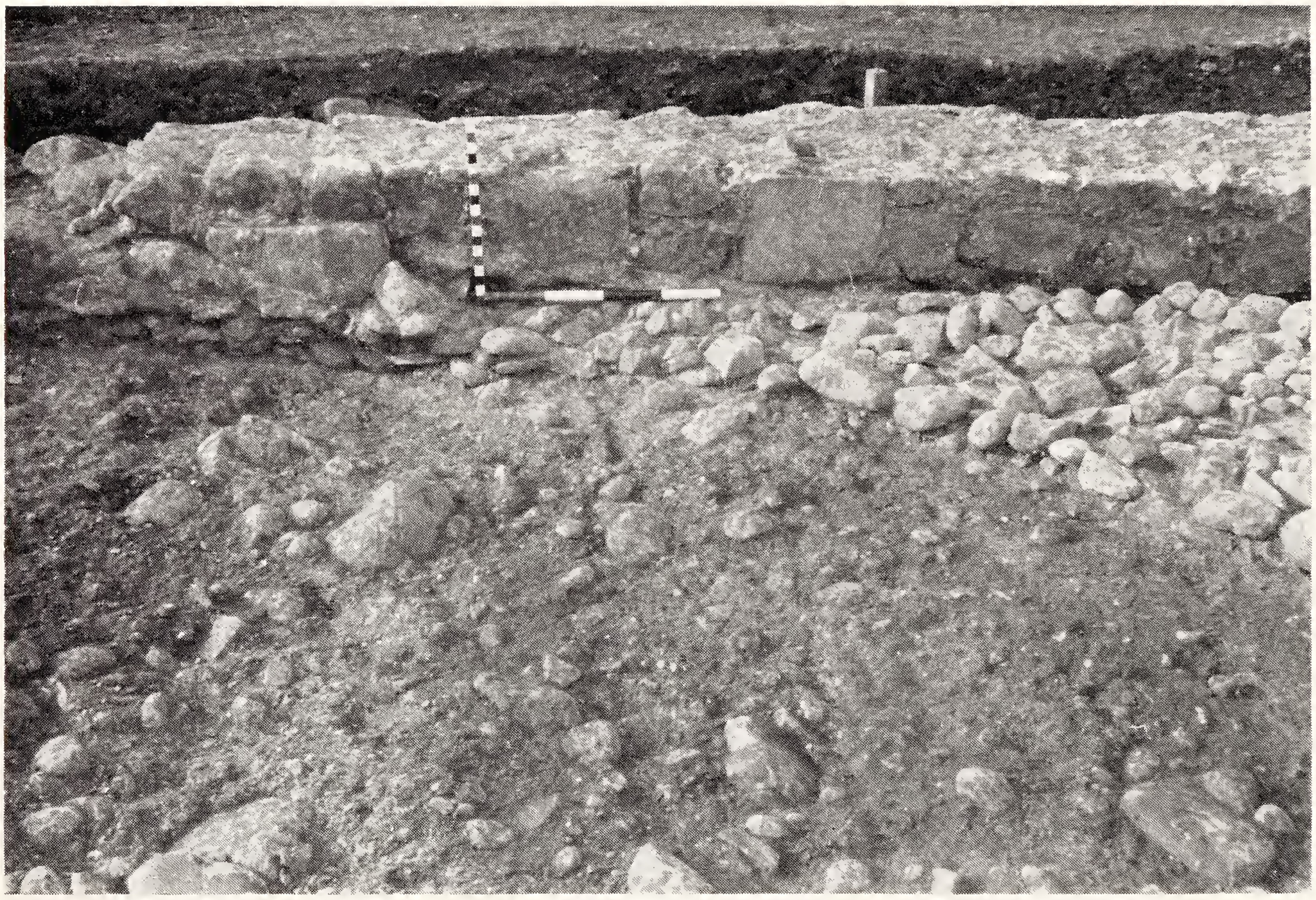

PLATE 1b. Junction of apse and later wall. *Ph.* Enid Sheldon

We must envisage then an unbuttressed, single-storied apsidal chapel, rather wide for its length but unaisled, regular in its form, without central pillars and with no division between nave and chancel. Its walls were of irregular gritstone, much of it probably from the river, and only roughly coursed. Its roof was probably of thatch or wooden shingles since neither tiles nor nails were found associated firmly with this phase, and it is doubtful whether such walls on so wide a building could carry lead satisfactorily. It can be inferred that there were substantial western quoins, since these are normal on local buildings of this type of whatever date, but in fact the corner stones were robbed out in both cases though foundation cobbles remained to the south. The date of the building will be discussed below since it is partly dependent on that accepted for its successor.

Phase 3: Fig. 6

The chapel was converted to a two-storey building with the principal chapel at first-floor level and an undercroft below. At the same time a westward extension of 57 ft. was built, the end wall of the chapel now serving as a party wall between two undercrofts. Centrally placed within the chapel were three cavities each capable of containing a stone pillar base of up to 2 ft. square. In line with these against the party wall was a semi-circular depression (Fig. 6, E) interpreted as the hole to take a half-pillar. The undercroft was thus divided into 3 bays each of some 11 ft., with a further, rather longer, interval separating the easternmost pillar from the apse wall. In the westernmost of the central cavities, turned upside down and re-used as a stylobate at a later time, was a scalloped capital (Plate 2b). The original south doorway remained as an entry to the undercroft, to which there was now a second entry more or less opposite. Beyond this latter, outside the building, were some rather rough stone roofing tiles, apparently serving as floor tiles, but with corner holes for pegs. It is uncertain whether these should belong to a roof repair at this time or whether they should be regarded as re-used phase 2 tiles, but the former seems more probable in the absence of such tiles elsewhere in phase 2. Again there was no external stair, but access would now be possible from the upper floor room to the west – the normal arrangement in a private chapel of this sort.

A spread of stones in the south-west corner of the chapel extended somewhat beyond the building on either side of wall J. (Plate 2a and Fig. 6). This was interpreted as the base of a turret stair connecting undercroft and chapel proper, a frequent arrangement found also at the archbishop's Bishopthorpe chapel. Because of intensive robbing of the site it was difficult to be certain of the precise succession of events, but this stair should either be contemporary with wall J or should post-date it. Plate 2a shows that it is intrusive to the chapel itself, its foundations somewhat shallower and a wedge of clay separating its stones from those of the wall proper.

The foundations for the new western extension were considerably more shallow than those of the chapel, and the building itself had undergone several alterations. Little of its south wall remained. Immediately west of the party wall it could be seen as a trace on the soil only, with demolition debris above its course, but part of the original work of the extension survived to the north. This stood out in marked contrast to the earlier stonework. The local millstone grit was cut into regular ashlar to form a wall with good mortar and fine jointing – the most convincing 12th-century masonry on the site. There was an external thickening of this stretch of wall (Fig. 6, H) which overlapped with an internal thickening of the same wall, all in similar masonry and all heavily mortared. Roughly central in the undercroft were four shallow slots. Each was 10 in. wide but they varied in length between 8 and 10 ft. As only one of these was reddened it did not seem as if the slots were connected with any fireplace arrangement. They were not precisely parallel with the walls, but although they appeared to be cut from the top of the natural clay, the absence of floor levels away from the extreme west end of the room made it impossible to associate them definitely with any building period.

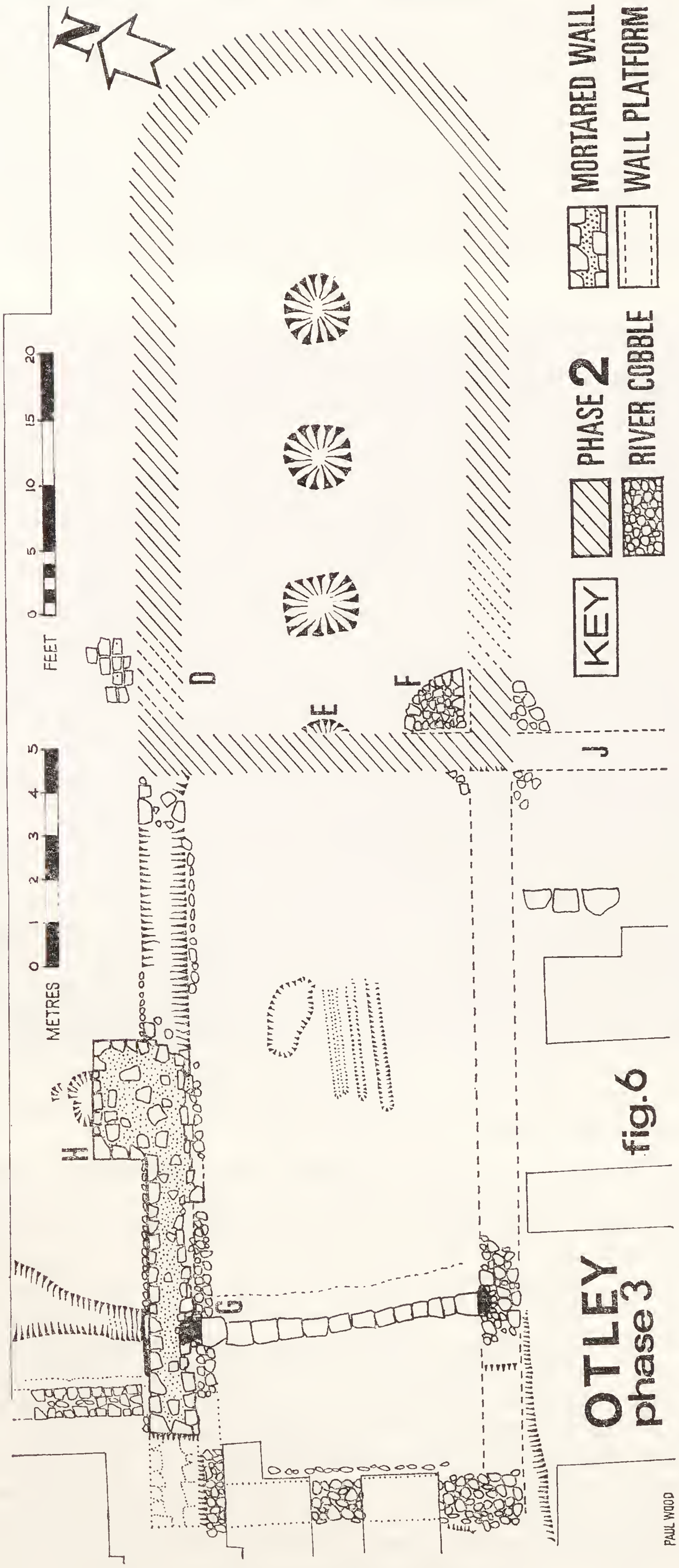

FIG. 6. Excavation phase 3.

The room was without aisles and there were no central pillars as in the adjoining undercroft, but the lack of hearth and the indications at H of a staircase within the thickness of the wall showed that the principal room was on the first floor. Any other arrangement would have been surprising in Yorkshire in such a context. It must be supposed that the upper room was carried on joists running the full width of the building, for which large timber would be required, and would be available in the archbishop's local woods.

We have then, in phase 3, a building 104 ft. long, divided into two roughly equal areas with main accommodation, chapel and chamber, at first-floor level.

Two difficulties arise if the range is to be considered a unit independent of other buildings on the site; first the lack of an external stair, and secondly the fact that there was no garderobe. The first difficulty might be overcome if the apparently purposeless stonework south of the building at U could in some way be interpreted as part of a stairbase, though this is not very convincing; but it was clear that there was no garderobe pit at this phase in the excavated area either to north or to south of the range. One further possibility exists. A wall (J, Fig. 6) extended southwards from the party wall. This was robbed even of its foundation stones, but the clear line of debris and the empty foundation trench survived. Unfortunately, it was not possible to continue the excavation long enough to find the return of this wall, but there were very narrow limits to the area within which it could lie. It could well have formed part of one of the long connecting galleries common on early medieval buildings,[30] though it must be admitted that it appeared solid for such a function.

The area between this wall and the south wall of the chapel was much disturbed by

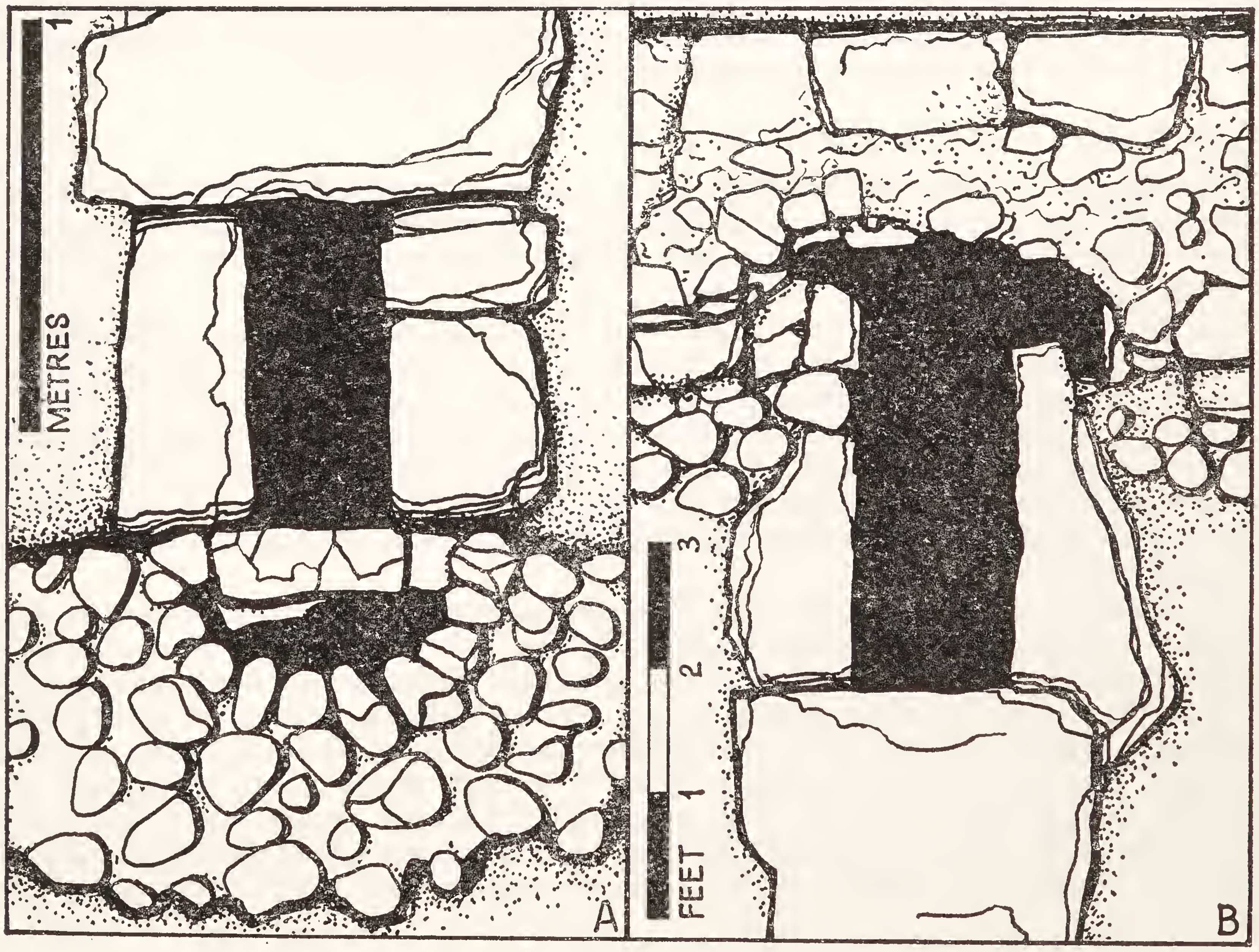

FIG. 7. Detail of drain endings. A, S. wall, B, N. wall from above.

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[30] E.g. A similar connecting wall at Prestbury interpreted as a pentice, H. E. O'Neil, 'Prestbury moat, a manor house of the bishops of Hereford in Gloucestershire', *Trans. Bristol & Gloucs. Arch. Soc.*, LXXV (1956), p. 8.

post-medieval quarrying and the small area west of the wall produced nothing below some post-medieval hearths, so that the problems of this part of the site could not be resolved. If, however, wall J formed part of a room linked with chapel and chamber, the stair and latrine could lie further south.

The division of alterations into 'phases' is a matter of convenience but must not be allowed to obscure the fact that between the periods of major change, that is of change which reflects new fashions in building, increasing standards of domestic comfort, or alterations in social customs, most manor houses were subject to continual minor structural alterations or modifications. Two such seem to have occurred between phase 3 and the next large-scale building period. First, at the west end an incompletely excavated northward extension is probably best interpreted as a porch, though the remains were too slight for positive identification. Second, within the western undercroft a drain was built. This coincided with the reconstruction of a considerable section of the south wall. A carefully made duct in the fabric of the wall over the drain's course showed the drain to serve some purpose within the building, possibly a basin or similar feature on the upper floor. South of the wall was a slot, probably a drip trench, though it was of considerable size, which emptied into the drain. The drain itself was lined and covered with stone slabs and was substantially intact within the building where it was filled with clean silt. In marked contrast to the careful arrangement at its south end a passage had been hacked for it through the north wall (Fig. 7, A and B) showing the wall to have been already in existence when the drain was built.

Beyond the wall it ran at first directly towards the river but was at a later date diverted further west. In both cases only the disturbance remained, the drain itself having been robbed out when the building was demolished. Inside the undercroft a penny minted between 1205 and 1210 and several sherds of pimply ware which could be of similar date were found in the construction trench of the drain.

Phase 4: Figs. 8 and 9, 1, 2 and 3

The chapel was extended eastwards and a square east end substituted for the apse; at the same time the range was also lengthened at the opposite end by the addition of a small western room of one storey only. Either simultaneously or as a subsequent operation a new north porch was built.

As far as the evidence goes it seems that the lateral walls of the twelfth-century chapel remained intact. The apse itself was taken down and its stub incorporated in the later wall at the south side (Plate Ia); Plate 1b shows the join at the level of the first course of the wall. While it is probable that the normal procedure of building the new end outside the old one was followed, there was no evidence on the ground to demonstrate the process. The laying out of the new line was surprisingly accurate and it may well be that in the case of a domestic chapel in intermittent use only, the normal routine would be unnecessary.

The new wall, like the old, was trench built, with foundations of river cobbles and some stretches of the trench, but some only, backfilled with clean yellow sand. The new masonry was characterised by a lavish use of mortar. Eventual robbing had reduced it to a level top which gave the impression of a sill wall. Only the survival of a few jagged upstanding pieces of masonry at the extreme east end showed conclusively that the wall had been of stone construction. When a section of the newer stonework was removed at its junction with the apse, a spread of granular shingle was found to lie among and over the older stones. The same unusual feature was found at the extreme west end of the range, delimiting the extent of contemporary work at that end of the site.

The principal chapel was still on the upper floor for the central roof supports were extended eastwards into the new part of the chapel. The fourth of the central cavities lay almost immediately west of the apse, though standing free of it. This gave a bay of 13 ft. 9 in. as opposed to the 11 ft. of the older series. Logically, a fifth support seemed

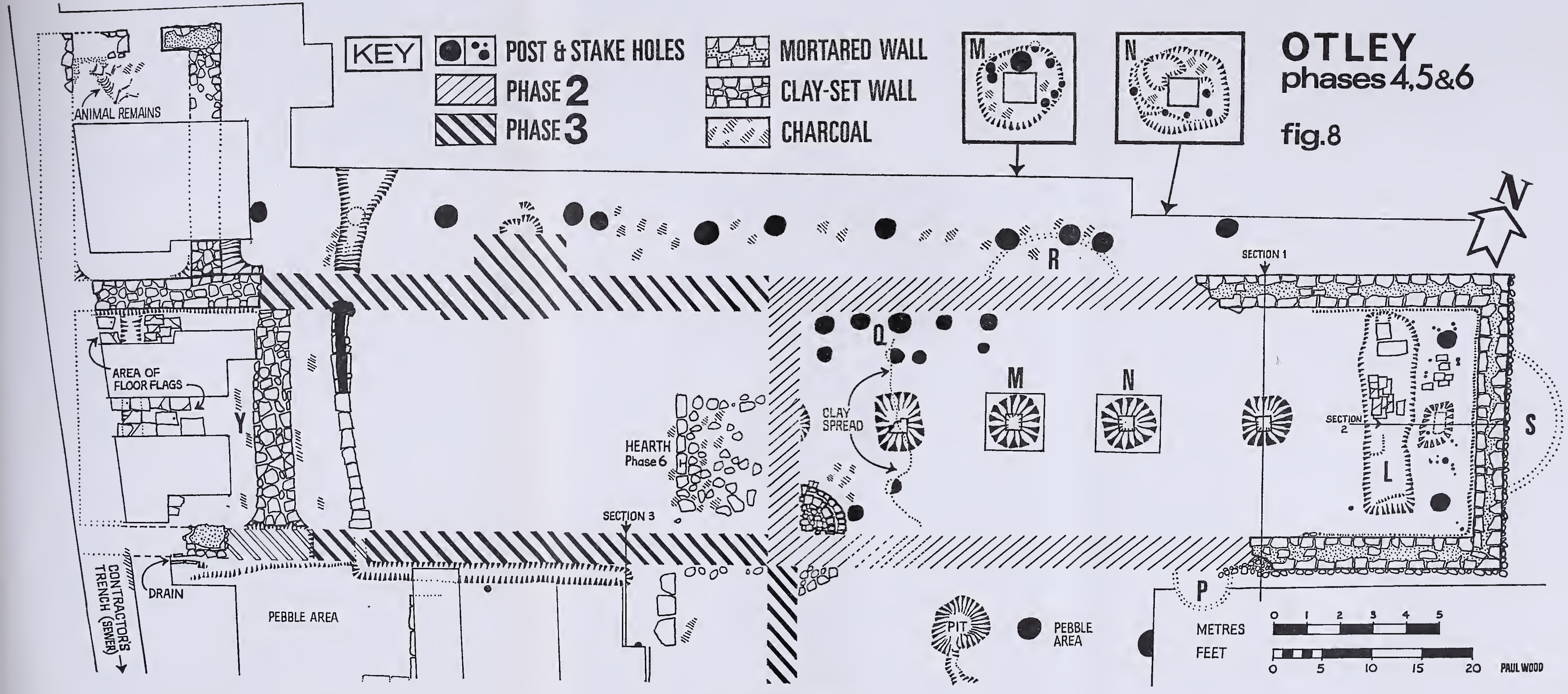

Fig. 8. Excavation phases 4, 5 and 6.

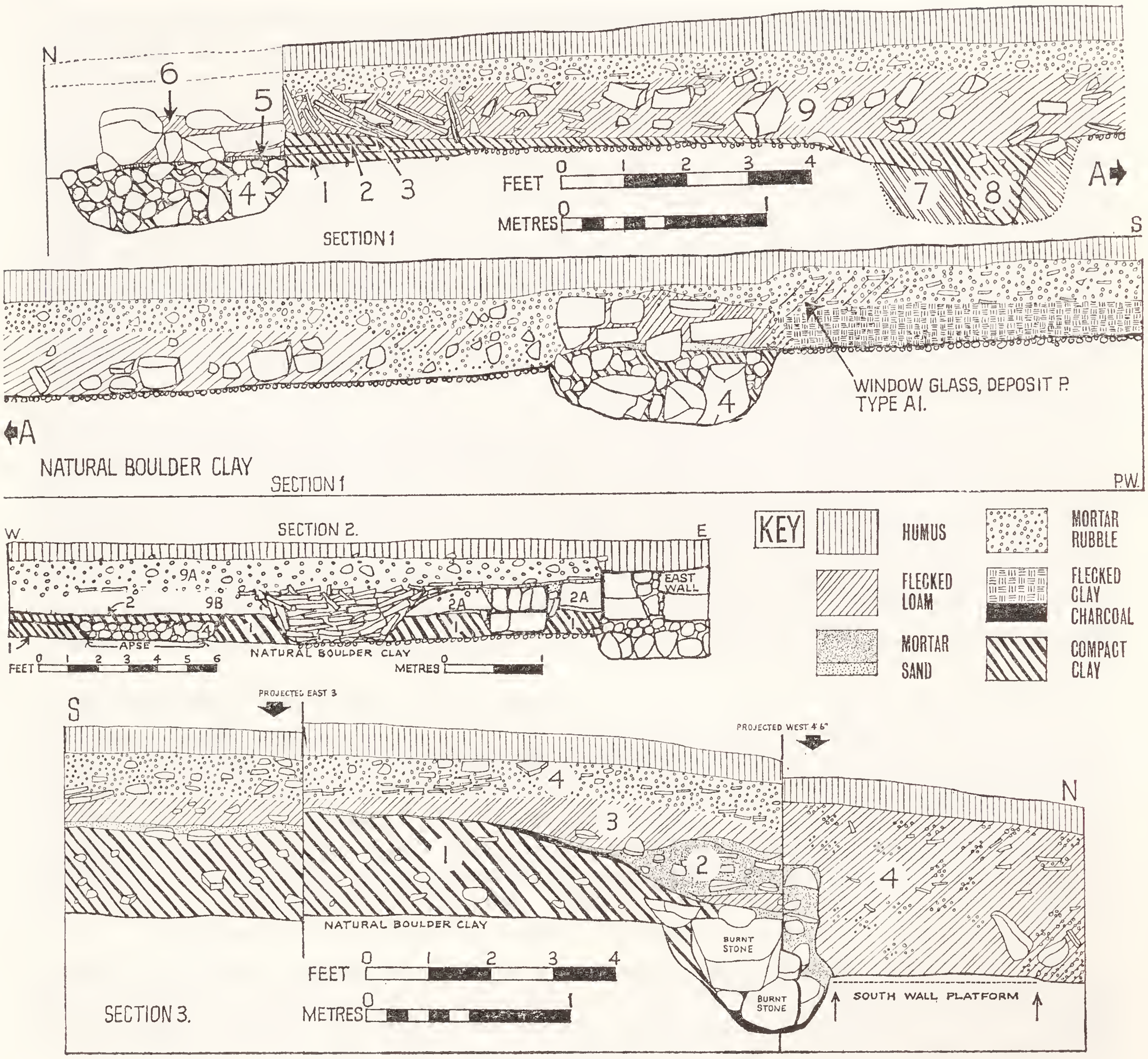

FIG. 9. Sections.

to be required further east, but in the appropriate position a trench (Fig. 8, L–1) extended almost the full width of the chapel. For the most part this trench was filled with broken roof and floor tiles, but at its north end two stone slabs, thicker than the rest, were apparently *in situ* though sunk a couple of inches below floor level.

Over the cobbles of the apse foundation, over the whole of the east end, including the area beyond the transverse trench, and intermittently over the body of the chapel was a boulder-clay spread, the bedding for stone floor slabs of which there were many surviving fragments. The clay build-up did not cover the yellow sandy areas of the foundation trench. Eastwards of trench L–1 were two post-holes symmetrically positioned and between them a fifth central cavity of rather smaller size than those further west. The post-holes, and the clay floor east of the trench, but not the cavity itself, were covered by a mortar spread. At the west end of the chapel, extending in an arc from the base of the turret stair, a spread of plaster lay directly over the clay floor and on it were patches of charcoal and other signs of burning which were difficult to reconcile with the indications elsewhere of a flagged floor. At this end of the chapel, parallel with the north wall, were several aligned post-holes. Whatever feature they represent was a permanent need, for they were repeated somewhat closer to the line of the wall in the succeeding period.

The most difficult feature in this undercroft to interpret was the transverse trench L–1 and its relationship to the fifth roof support cavity westward of it. There were two possibilities: first that it was the base for a substantial stone altar and second that it was the foundation trench for an internal wall separating a sacristy or vestry from the undercroft proper. The off-centre position does not necessarily rule out an altar because an extension of the original cavity would be almost inevitable when removing so large a stone. The arguments against an altar are that we are dealing with an undercroft and not a chapel and so substantial an altar might seem out of place, not least because a bare 12 ft. 6 in. would separate it from a large central pillar blocking access from further west. Less important, but still to be considered, is the fact that other chapels on the estates had altar stones supported only on wooden bases.[31] Interpretation of the feature as a wall would explain why mortar was found on the floor only to its west, and allow a support for the upper floor at a reasonable bay distance from the fourth central cavity.

The wall would still be a secondary feature in the phase 4 building for although the gap to the south could be interpreted as a somewhat narrow doorway, the north end of the trench is separated from that of the north chapel wall, though not by so much that a wooden partition on a sill beam would not cut off the west end of the undercroft completely. The difficulties in this case are the two symmetrically placed post-holes, which look like supports for a reredos, and the central cavity, beyond the trench, which must have contained a roof support at both this and the succeeding phase. This would be redundant if a wall cutting off the eastern area were to act as a roof support itself.

A further possiblity, though it must be suggested with considerable hesitation, since there was little tangible support for it, was that at this period the chapel was of a single storey at the east end, the upper floor further west forming a large gallery only, as is occasionally found in manorial chapels.[32] It is not easy to understand the reason for such an arrangement in an archiepiscopal chapel, where there was no need for division between nave and chancel, nor is there any archaeological trace of such an arrangement. Nevertheless, it would resolve conveniently the difficulty of interpreting what was found at the east end and must, therefore, be considered seriously. The fifth central cavity would then belong to a reredos, perhaps taken to roof level.

The chapel walls were plastered outside and inside in white, and within the building the plaster was both engraved and painted with lines of false masonry in red (Fig. 13, No. 2). The northern doorway into the undercroft was no longer in use since the post-hole feature extended across it.

The eastern window is likely to have consisted of a group of lancets as in the chapels at York and Bishopthorpe, for the glass deposit found beyond the building at S (Fig. 8) contained a few pieces with straight edges and a design which could not have fitted into the scheme of decoration indicated by the majority of fragments from the area. Re-fenestration of at least one of the older windows must have taken place when the chapel was extended, as the glass north of the chapel at R (Fig. 8) is of the same character as that of the main east-end group.

So few domestic chapel undercrofts survive or have been excavated that any interpretation of features such as the row of post-holes inside the north wall must be very hesitant. It is clear from sixteenth-century archiepiscopal inventories that either shelves or perhaps a piece of furniture having hooks for garments are possibilities, and that such features could be described as 'set on posts in the ground' or 'fastened in the yerthe'.[33] The function of the undercroft in a medieval private chapel is little known, though there are indications that it might be used for the transaction of ecclesiastical business. Possibly in some cases it may have been used either as a room for one or more chaplains or as a vestry, both of which appear as items in manorial inventories at Cawood and Southwell in the sixteenth century.

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[31] E.g. P.R.O., SC 11/766 Cawood, 'an awlter stone laid upon posts of wood'. Southwell, 'iij awlters framed of Waynscotte'. Scrooby, 'oone alter tymber'.

[32] See M. Wood, *The English Medieval House* (1965), pp. 231–33.

[33] *Op. cit.* in Note 31.

Outside the north wall of the building a line of post-holes extended from the porch to near the east end of the chapel. These might be interpreted as scaffold holes, but if so it is difficult to see why they were unnecessary on other walls of the building. More probably they represent a covered way, though there was no doorway from the undercroft at this time, unless the internal post-holes have been misinterpreted. Extensive gardens are to be expected adjacent to the private apartments and these could well have been partly on the river front, in spite of the north aspect.

At the opposite end of the range the new west room was excavated by trenching only, though it was possible to add useful detail from observation of the contractor's trenches. The use of granular shingle in the wall construction has already been mentioned. The room (18 by 22 ft.) was floored with large sandstone flags three-quarters–one inch thick, resting on a level base of flecked clay, the only intact floor found on the site. A shallow north-south channel below the flags was judged to represent a subsidiary drain whose course was picked up beyond the south wall in the area of the drip trench. When this new room was built the old west wall was taken down and a new party wall inserted slightly further east. This had a marked splay at its southern end, and the adjacent clay to the east was marked with three long charcoal smears accompanied by pronounced reddening of the surface. Beyond the wall to its west, inside the new room, were fragments of glass of considerably later date than that found at the east end of the site (below, p. 139). The position of this glass scatter seems to indicate a window at first floor level above the extension, an arrangement found also at Markenfield Hall.[34]

A new northward extension (Fig. 8), only partly excavated, probably belonged to this major building phase. The north-south wall was of rough dressed masonry with rubble core, but towards the river, where there was a substantial entry, this gave way to large well-mortared ashlar. Near the entry to its west was an animal burial (p. 141 below). The intrusion was later than the destruction of the building but not of recent origin since it was cut from below a considerable build-up of loam.

Phase 5: Fig. 8

At various times traces of fire damage within the building have been mentioned. These were confined either to the western undercroft or to the part of the chapel undercroft next to it. But none of these traces of burning seemed to indicate damage serious enough to warrant the major structural changes that now took place in the chapel area.

The stone pillar bases that must originally have been contained within the cavities, including cavity 5 at the extreme east end, were removed and replaced by much smaller stones each capable of taking a timber no more than 18 in. square at the largest. The area around these stones was packed with hard-rammed clay, and cut into this clay in each case were a number of stake holes (Fig. 8, M and N). This change was probably accompanied by further demolition elsewhere, for the most westerly of the support stones was the base of the scalloped capital of Plate 2b. The arrangement indicates that this was still a building of two storeys for the most part, though the possibility of an alternative interpretation of the easternmost cavity must be remembered.

It is difficult to be positive that it was still in use as a chapel, though there are two small scraps of evidence to suggest that it may have been. First was the reconstruction of the row of post-holes parallel with the north wall. These were all packed with substantial stones on the south side and two had further packing stones either to east or west. Whatever need they had served continued unchanged from the time when this was certainly a chapel undercroft. The second is that the glass at the east end was not mixed with demolition debris, nor was there demolition debris above it. Medieval glass of this kind was valuable and was usually removed as needed from building to building. The fact that glass was found in this position at all suggests an accident rather than the result of the building simply falling into decay; the fact that it is not mixed with demolition debris suggests that the chapel was deliberately demolished when it was no longer required for its original purpose. Be that as it may, there is no doubt that the internal arrangements at least were destroyed by fire since almost an inch of charcoal was spread over the positions of the western roof supports.

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[34] SE 294673. The west window is now blocked, and there is a lower and later western extension.

Phase 6: Fig. 8

Across the west end of the chapel was a build-up of clay some 6 in. deep which sealed charcoal lying on the two westernmost stylobate stones. Whatever activity was pursued in the partly ruined range seems to have been confined to the area west of this clay (Fig. 8). Although there was no tidy line where the clay terminated, light partition walls could well have existed. East of this clay the chapel was almost certainly demolished, for though the whole area within the walls was littered with stone roofing tiles and flag stones, the post-medieval pottery and occupation debris was confined to the area west of this line within the building and to the area south of the chapel (Section 3, Fig. 9).

Against the west side of the party wall a hearth was constructed which sealed a clay pipe (p. 140 below). This hearth was succeeded by a second, directly above it; and in the debris surrounding the upper hearth was a trade token of *c.* 1700. A pivot-stone on the south wall is likely to have marked the site of a har-hung door into the building, which may have been in use as a lodging or small house for some considerable time after the main occupation of the manor house was restricted to buildings nearer the town. Immediately south of the small building were some hearth-like arrangements, largely destroyed when the site was mechanically cleared of its top-soil.

IV

THE DATE OF THE BUILDINGS

Because of the importance of Otley in the pre-conquest period, it is necessary to consider the possibility of a Saxon date for the single-storied phase of the apsidal chapel. With a building as much robbed and altered as this there are few criteria that can be applied. The western quoins which might have provided a useful indication were totally robbed out, but it can be remarked that there is place for fairly massive stones (Fig. 5). The roughly coursed rubble would be acceptable on either side of the Conquest as would the 3-foot-wide walls. More Saxon than Norman was the failure to cut away the ground on the upward slopes to prepare an even foundation; so, too, was the thin layer of silt intruding between the foundation cobbles and the wall proper. The general proportions on the other hand, the width, the regularity of the plan and the apse itself all suggest a Norman origin. It would be necessary to go as far south as Pentlow or Bradwell in Essex, or to South Elmham in Suffolk to find such width combined with an apsidal east end of Saxon date, whereas such shape and proportions are relatively common in the early Norman period.

One final structural point must be put into the balance. This chapel survived three major alterations, all of which involved the existence of an upper floor, and at no time were these rubble walls in need of buttressing. If this is Norman work, its durability is surprising.

The pottery, either that of Middle Saxon or of Saxo-Norman date is not a great deal of help since the former could be associated with the stakehole complex – though there seems rather much of it in that case – while the latter is known to have persisted into the early years of the 12th century. No hall is mentioned in Domesday, but so few halls appear at all in the Yorkshire Domesday that this again is inconclusive. Nor is the lack of division between nave and chancel suggestive, for although there are no early surviving private chapels in the north with which to compare this (the mural chapel at Richmond is of a different order of things), later archiepiscopal chapels are similarly undivided. If the chapel is of Norman date it is likely to originate in the period of reconstruction following William's devastation in 1069. A total rebuilding at such a time might account for the separation of manor house and church. Alternatively, the somewhat unusual relationship of the two buildings might be due to the growth of manorial administrative buildings away from the ecclesiastical centre, a situation most probable if the suspected early monastery were a reality. The dating for this important phase in the chapel's history is then, inconclusive, but it can be pointed out that the area north of the chapel has not been disturbed and could eventually be excavated to help with the solution of this difficult problem.

The conversion of the early chapel to the more familiar private chapel at first-floor level above an undercroft is likely to have taken place in the second half of the 12th century. The evidence for this, while circumstantial, all seems to point the same way. First there is the scalloped capital, which, though found in a secondary and late position, must surely belong to this phase. It has parallels among the buildings at Kirkstall Abbey, only 7 miles away, which were finished by 1182.[35] We have said that the requirements of access indicate that the conversion was contemporary with the western extension for an upper floor chamber. A penny of John's reign was associated with alterations to this building. This in itself is not conclusive evidence of an earlier date for the extension, for the penny might have been disturbed during the alteration, but the associated pottery was also of the type known as pimply ware which would not be out of place in the late twelfth century. We have already noticed the contrast in the valuation of the Otley house and the use to which it was actually put, and suggested that the importance of the manor house may well have lain in the 12th century for which there are no relevant surviving written records. In sheer size this apsidal chapel exceeds that of the archbishop's chapels at Bishopthorpe or York,[36] while the quality of workmanship of the capital (Plate 2b) indicates an impressive upper chapel whether it belonged to window or door. If other buildings of like date lay elsewhere on the site, the valuation becomes comprehensible.

The evidence for or against a vault in the undercroft is difficult to evaluate. The regular spacing of the central pillars gives not only an equal bay division but also six squares, each of approximately 11 ft., to suggest a cross or quadripartite vault terminating at the west end in a half-pillar and at the east end in a half dome which would have to be low to accommodate the floor of the chapel proper. Against such an interpretation is the lack of buttressing, for although unbuttressed upper floor halls of not dissimilar date are known, as for example at Burton Agnes or at Boothby Pagnell, their walls are of the order of 4 to 5 ft. thick and properly coursed. The alternative is a timber floor with central supports as in the present chapels at Bishopthorpe and York today, though in neither of these cases, is the arrangement necessarily original. The arrangement would pose the problem of the lack of central supports in the adjoining chamber undercroft which was of similar width, slightly larger size, of contemporary date, and with properly coursed ashlar walls. Perhaps more understanding of the function of these undercrofts might help to solve the problem.

The dating evidence for the square end lies principally in the nature of its glass windows, of which fragments were found at the east end and near the apse springing (Fig. 8, P.R. & S. and p. 138). Dr. Newton is of the opinion that such stiff-leaf decoration on cross hatching combined in a geometrical window should belong in the third quarter of the 13th century. Neither Giffard (6 days in 11 years) nor Wickwane (6 days in 5 years) are known to have taken any interest in the place. On the other hand Gray (died 1255) seems to have given a certain amount of attention to Otley itself (the market, the bridge and probably the borough are believed to be his work). The registers of the two archbishops who followed Gray have not survived. It could be suggested that if the work was initiated by Gray this could take its finishing date plausibly into the date range required by the glass.

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[35] Complete by 1182; E. K. Clarke, 'Fundacio Abbathie de Kyrkestall', *Publ. Thoresby Soc.*, IV (1895), p. 181.

[36] The other archbishops' chapels of known dimensions in the county are Bishopthorpe, upper floor chapel 49 by 22 ft., without division between nave and chancel, corner buttresses, mid-13th century; York 53 by 20 ft., upper floor, no division between nave and chancel, corner buttresses, mid-13th century. The excavated chapel at Rest Park, 18 by 32 ft., an undercroft only, one corner buttress only, was of late 14th century date.

The chapel in its new form was very large indeed for an episcopal chapel. This is partly because the size of the apsidal chapel would to some extent impose the dimensions of later building, but only partly, since the new east end extended a full 13 ft. east of the apse, several feet further than would be needed to insure a functioning chapel while the new work was in process, if such were required.

No precise date can be set on the major reconstructions of phase 5 since there were no associated finds. It is tempting to see it as patching up by Melton after the Scottish raids, but this would be to go beyond the evidence.

It is clear, however, that the Otley house was never reorganised into the regular court-yard or double court-yard building of the later middles ages. The excavated wing, by its nature, must form part of the archbishop's private apartments, and these are normally situated, as they are here at Otley, as far as possible from the entry.[37] The situation along the river front is remarkably similar to that which still exists at Bishopthorpe and which can be inferred from the position of the gatehouse in relation to the river at Cawood;[38] both were manor houses held by the archbishop throughout the middle ages, both were moated, and were in much more regular use than the Otley manor. As at Cawood, it looks as though the last surviving buildings at Otley adjoined the gatehouse, which must have lain towards the town near the position indicated for the 'manor house' in the 16th century.

V

THE POTTERY

Figs. 10 and 11

The buildings were kept very clean throughout the medieval period. There was no pottery at all in the chapel until the old ground surface was reached, though the western area was less barren, yielding 63 sherds from all levels. The remainder of the pottery was from outside the buildings.

Ten sherds, of which two joined to make the same pot, were made on a slow wheel or turn-table. This sort of pottery normally has a date range from *c.* 650—*c.* 850.[39] Characteristically the wheel marks are visible but not quite regular. To suggest that this rather primitive pottery has a date range in the Pennine valleys similar to that in the northern capital or in East Anglia may seem a large assumption but since Otley must have been visited regularly by men of the archbishop's household, if not by the archbishop himself, it is perhaps not altogether unreasonable to suppose it roughly contemporary with York material. The fabric is reduced and a variant of the type known as *Ipswich ware.* For convenience it is termed *Otley type ware.* In No. 1, Fig. 10, it is fired hard enough to raise the grits slightly above the pot surface, giving a pimply appearance. Nos. 2 and 3, though very gritty, are less highly fired and the grits remain level with the surface. A third variant, not illustrated since only body sherds were found, contains mica as well as grits. No. 1 is nearest in fabric to pottery

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[37] For a discussion of the arrangement of episcopal manor houses see P. A. Faulkner, *Arch. Journ.,* CXXVII (1970), pp. 130–46.

[38] The gatehouse and adjacent buildings survive at Cawood. The private range was almost certainly destroyed by housing in 1972, but the public buildings may still survive underground.

[39] J. G. Hurst in 'Anglo-Saxon Pottery: a symposium', *Med. Arch.,* III (1959), pp. 13–31.

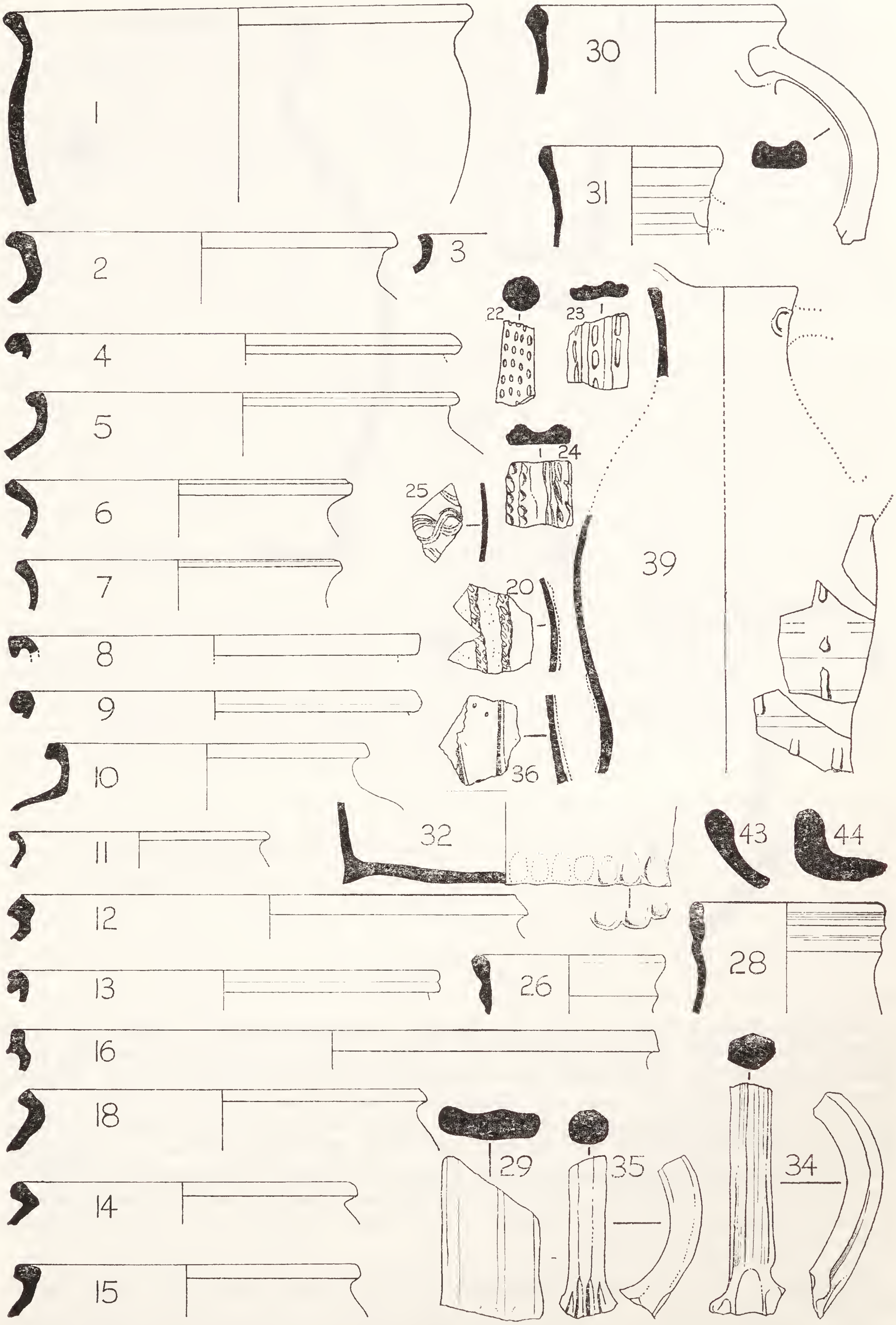

FIG. 10. Pottery.

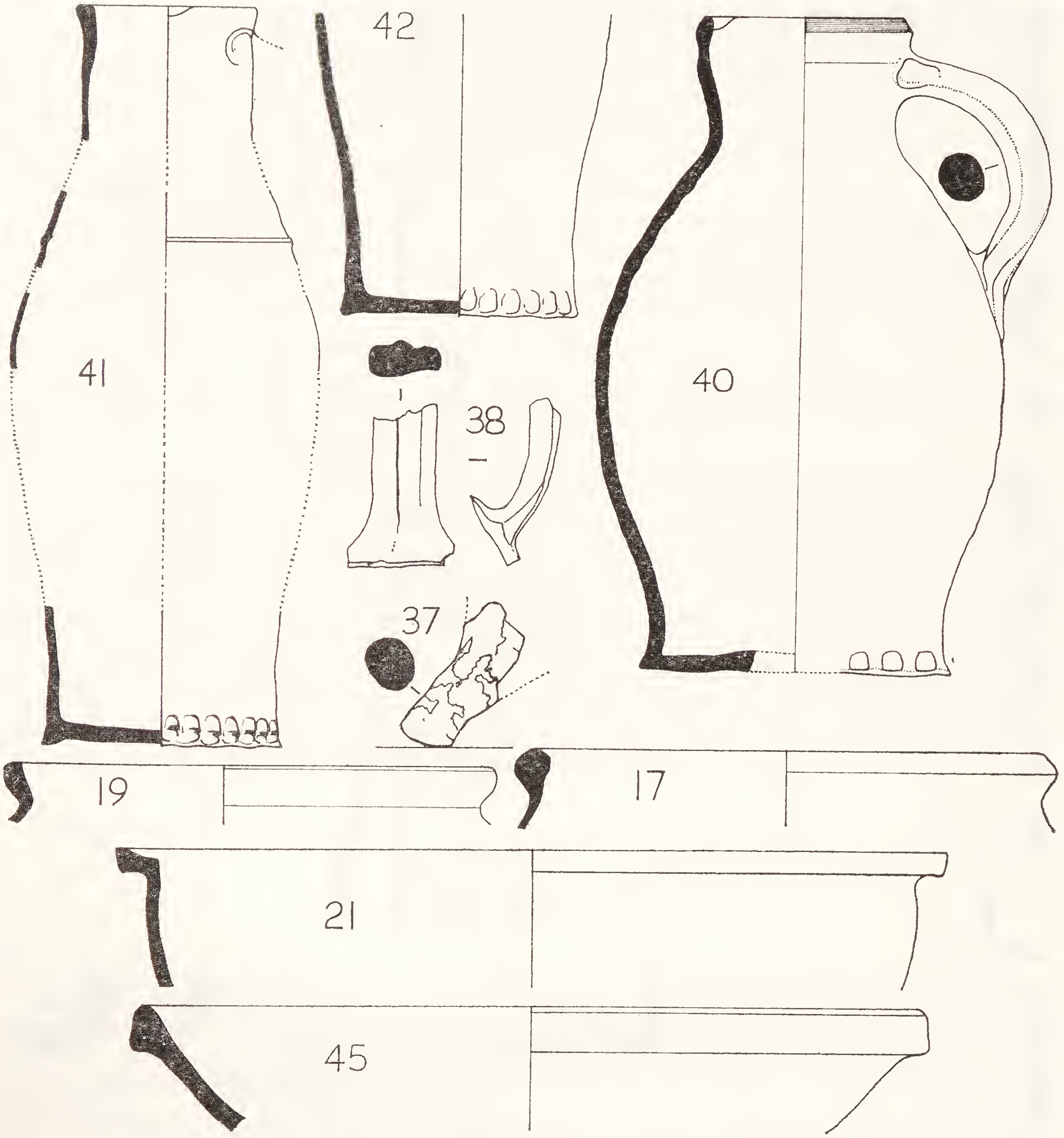

FIG. 11. Pottery.

from King's Square, York,[40] but in fact there is no precise parallel to *Otley type ware* among other middle Saxon pottery in Yorkshire, either for shape or fabric. The nine pots represented are presumably for cooking, but where the shape can be inferred from the remaining sherd, they are considerably larger than the characteristic cooking pot of the pre-conquest period. It must be pointed out, as far as numbers go, that there are almost as many pots of this date from the Otley site as have yet been recognised from excavations in the whole of the city of York.[41] The two pieces of No. 1 came from post hole B, Fig. 4 and from the ground adjacent to it. Of the remainder two were from the old ground surface in the chapel, the others from the same level in the west end of the building.

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[40] Le Patourel in L. P. Wenham, 'Discoveries in King's Square, York', *Yorks. Arch. Journ.*, XLII (1968), Fig. I, Nos. 1–6.

[41] Up to and including 1972 these amount to 11 sherds, from 17 excavations which might be expected to include pottery of this date range.

Also found at the lowest level were the 5 Saxo-Norman rims,[42] Nos. 4, 5, 6, 7 and 8 all thrown on a fast wheel and all in fabric apparently derived from that of Nos. 2 and 3, which they closely resemble. Nos. 9, 10, 11, 12 and 13, 16 and 18 are cooking pots and bowls in pimply ware.[43] This fabric was recognised as a 12th-century ware in Yorkshire as early as 1951[44]. Later it was realised that the fabric was used for the manufacture of cooking pots right through the 13th century and that close dating would be impossible unless there were other indications of date present.[45] Characteristically the fabric is well fired with small grits protruding beyond the body of the pot. It is often thrown very wet so that there is marked smearing following the wheelmarks which themselves are often pronounced enough to be a decorative feature. The pots are normally, though not invariably, oxidised, with a colour range through pinks, buffs and greys, and the rim is angular as in Nos. 8, 9, 10, 12 and 16 (Fig. 10). Three body-sherds of pimply ware were in the construction trench of the drain. The total for the whole site was 30 sherds.

Numerically East Pennine gritty ware was the most frequent find (224 sherds). Nos. 14, 15, 20, 22, 23, 24, 25, 30, 31, 32, 36 and 39 are all oxidised and in various shades of pink with partial glazing in light brownish green. There is a very strong similarity between pots in this fabric at Otley and those found at Kirkstall Abbey.[46] Frequent and elaborate decoration of handles, the occasional use of white slip under the glaze, continuous fingerprinting of bases as well as the type of rim profile all suggest a common source for Otley and Kirkstall pottery, probably the kilns at Potter Newton, which were important enough to change the name of the village in the 13th century.[47] Nos. 36 and 39 are decorated with brown slip. Nos. 43 and 44 are moulded dishes in a gritty fabric which might well be from the same source. No. 17, Fig. 11, a bowl in micaceous fabric, is one of a class represented by some 53 sherds. It seems unlikely that these pots, which must belong for the most part to the 13th and 14th centuries, are related to the early micaceous wares of the North and East Ridings, but it should be noticed that among the Middle Saxon pottery sherds at Otley is a fabric with mica inclusions. This may indicate an unbroken local tradition of pottery-making in the same way as there seems to be continuity between the Saxo-Norman fabric called York ware and the later pimply ware. A fair proportion of the unpublished material from the Roman fort at Ilkley, some 6 miles up the valley, is in this micaceous ware.[48]

Highly decorated pot often travelled considerable distances either by way of neighbouring markets or because pottery, like other household necessities, was transported by the peripatetic households of the middle ages. Early in the 14th century the archbishop was paying a visit at least once a year to the manor house at Otley. It is not therefore surprising to find several jugs which must have originated in the city of York. No. 37 is a foot from a tripod pitcher, possibly York, Nos. 40, 41 and 42 are certainly from York. No. 40, with a complete surface wash of white slip but without glaze, is more difficult to place, and could have been brought from outside the county.

Humber ware (Nos. 19, 21, 26, 28, 29, 34, 35 and 38) is much less well represented than is normally the case on Yorkshire sites (52 sherds), and the examples found have more grit inclusions than is the case on known Humber-ware kiln sites. This is probably because the manor house was little used after the first decade of the 14th century, while Humber ware is most widespread in the 14th and 15th centuries, though an earlier form is believed to have been made in Doncaster.[49]

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[42] The Saxo-Norman fabrics normally found in Yorkshire are summarized in Le Patourel, Appendix B, C. V. Bellamy, *Pontefract Priory Excavations,* Publ. of the Thoresby Soc. XLIX (1965), pp. 106–10.

[43] *Ibid.*, p. 111. Pimply ware is the fabric formerly called 12th century gritty northern ware.

[44] Le Patourel in *Kirkstall Abbey Excavations 1950–54*, Publ. of the Thoresby Soc., XLIII (1955), p. 23.

[45] *Op. cit.* in Note 42, pp. 111–12.

[46] See especially *op. cit.* in Note 44, Fig. 9, No. 22; *Kirkstall Abbey Excavations 1955–59*, Fig. 31, 9a and b; and *1960–64*, Fig. 16, Nos. 7–11, Publ. of the Thoresby Soc., XLVIII, (1961) and LI (1967).

[47] The significance of such name changes is discussed in Le Patourel, 'Documentary evidence and the medieval pottery industry', *Med. Arch.*, XII (1968), pp. 108–24.

[48] Unpublished. For micaceous ware in Yorkshire see Le Patourel, *The Moated Sites of Yorkshire*, Soc. for *Med. Arch.*, Monograph Series No. 5 (1973), pp. 97-8.

The greater part of the post-medieval pottery belongs to the 18th century. The majority of finds consisted of hollow ware in either light brown glaze on a pink fabric (147 sherds) or dark brown (153 sherds). No. 45 is a bowl, of pink fabric with light brown glaze. Apart from this, Staffordshire (53), Westerwald stoneware (1) and Nottingham stoneware (4) were also represented. There were no medieval imports and apart from the post-medieval fabrics, nothing from any distance greater than York (29 miles).

COINS

1. England. JOHN.
   Short-cross Penny.
   Mint: Canterbury.
   Moneyer: ARNAVD.
   Type 5B.
   c. 1205–10.
2. HENRY III.
   Long-cross Penny.
   HENRI ON LVND.
   London mint.
   Class 3B.
   1248–50.
3. Scotland. ROBERT II (1371–1390).
   Penny.
   Perth mint.
4. JETTON English.
   End of 13th century to early 14th century.
5. Scotland. CHARLES I.
   Third Issue.
   1642, 44, or 50.
6. WILLIAM III.
   6*d.* 1697.
7. *Obv.* Stephen Topham in Otley.[50]
   Rev. His penny in Yorkshere.

THE GLASS[51]

Fig. 12 and Fig. 8 for position of deposits

There were 4 major deposits of glass, 3 around the chapel (Fig. 8, P.R.S.) and one at the west end of the chamber undercroft (Y). In addition a single fragment, No. 11, was found on the sand associated with the phase 4 chapel (p. 128 above), perhaps representing a break during window construction. Deposit Y was contained in mortar together with lead cames; P, R, and S were from flecked loam beneath the topsoil and were not accompanied by other demolition debris.

Type A window glass 1, Fig. 12, varied in thickness between 1.5 and 3 mm. The glass was opaque and painted in red ochre. Some 200 fragments were found in deposit P,

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[49] For a definition of Humber ware and its distribution see Le Patourel, 'Hallgate, Doncaster and the incidence of face-jugs with beards', *Med. Arch.*, X (1966), pp. 160–3.

[50] For Stephen Topham see W. Brigg, *The Parish Registers of Otley,* Vol. I Publ. of the Yorks. Parish Register Soc. XXXIII (1908), p. 182. 'Stephen Topham and Grace Younge both of Otley married the second daie of Aprill 1668.' Topham does not appear in the Hearth Tax of 1664 but in 1672 is rated at 12 chimneys. He died on 24 February 1672 (*ibid.* Vol. II, p. 183).

[51] We are grateful for the help of Dr. P. Newton with the glass.

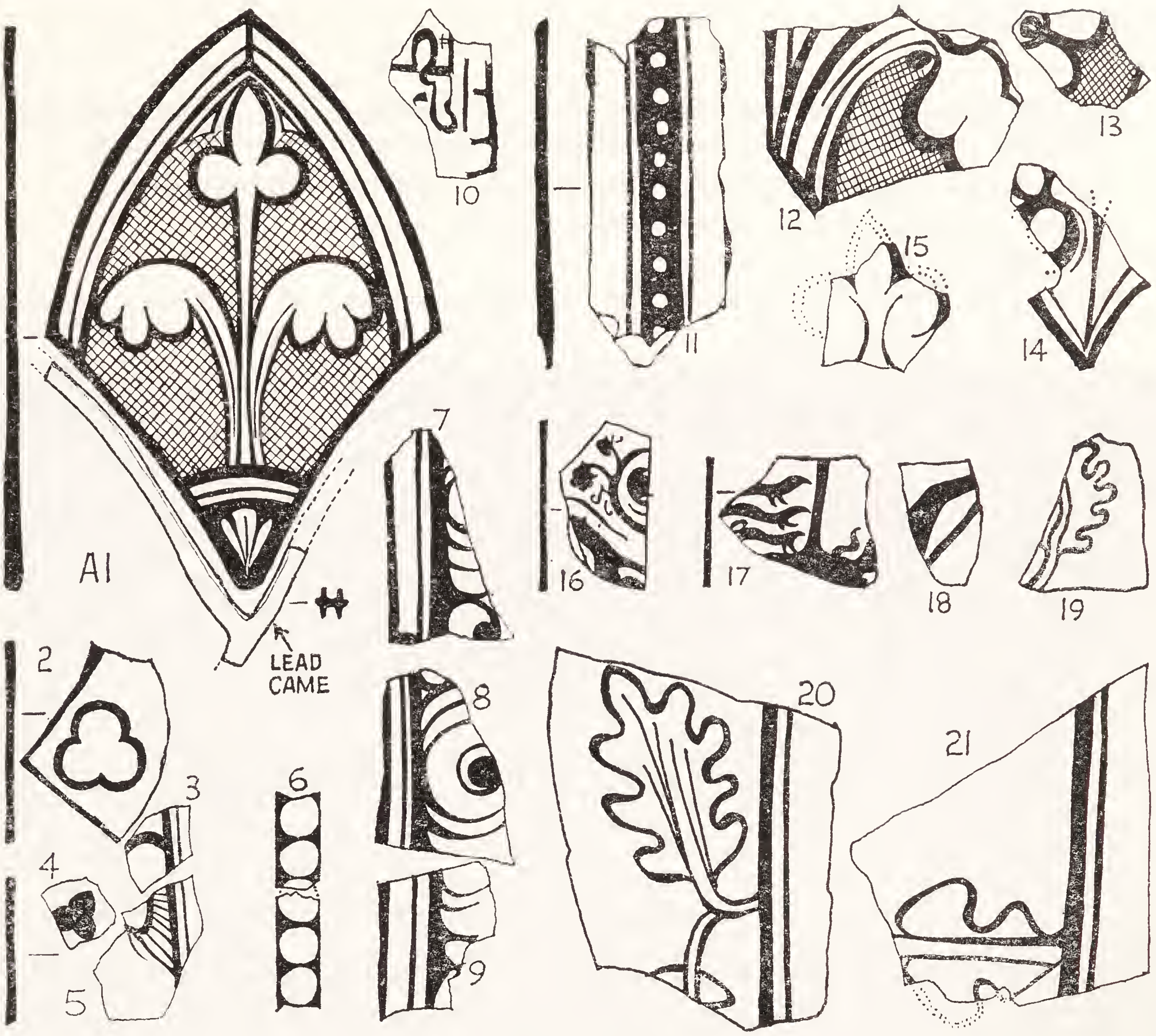

FIG. 12. Glass.

along with a quantity of lead cames. The pieces represent part of a geometric grisaille design with stiff-leaf foliage on cross hatching. The design A1 was repeated at least nine times in the sample recovered. Deposit S again produced lead cames and an even larger sample of glass, of which the greatest part was of type A1 but included also No. 10. Deposit S also included a number of border designs 6, 7, 8 and 9, and 12, 13, 14 and 15, which though similar seemed to be a more developed form of A1. Deposit R beyond the north wall, produced type A (2, 3, 4 and 5) only. All these pieces should belong to the third quarter of the 13th century,[52] though the border designs could of themselves belong to a wider date range.

Fragment 11, from the chapel floor, cannot be closely dated. The remainder of the chapel glass (19, 20 and 21 from deposit S) consists of straight edged fragments with more naturalistic designs of eight-lobed leaves within a border. These are likely either to form part of a design of white quarries painted with trails of naturalistic foliage or a geometric design as at Merton College chapel.[53]

The glass from the west end of the chamber undercroft was of a different character. A small fragment of semi-transparent green-tinged glass was an even 1.5 mm. in thickness, of fine quality and buff painted with a delicate foliage motif (No. 16). Two fragments (17 and 18), similar in character but opaque, from the same place were of somewhat puzzling design. The larger appeared to represent a recurring design incorporating an animal, but for this there is no known parallel.

[52] C. Winston, *An inquiry into ancient glass painting,* Vol. II (1847), Plate 33.

[53] R.C.H.M. England, *An Inventory of the Historical monuments in the City of Oxford* (1939), Plate 145.

SMALL FINDS

Fig. 13

1. Socketed arrowhead with leaf-shaped blade, hunting type, from western undercroft. Probably 13th century (see *London Museum Catalogue No. 7,* p. 69, No. 4).
2. Wall plaster from phase 4 chapel, engraved and red painted on white plaster.
3. Bronze belt chape from trial excavation 1967 (P. Mayes).
4. Clay Pipe: Report by A. Whitaker.
   One bowl, slightly damaged on rim, found at east end of chamber undercroft sealed by phase 6 hearth, *c.* 1610–1640. Bulbous, flat-based type, hand-made with no marks or decoration other than the milling immediately below the rim which is usual for this period. Almost certainly of London origin, distributed in the North at this time through coastal trading.[54]

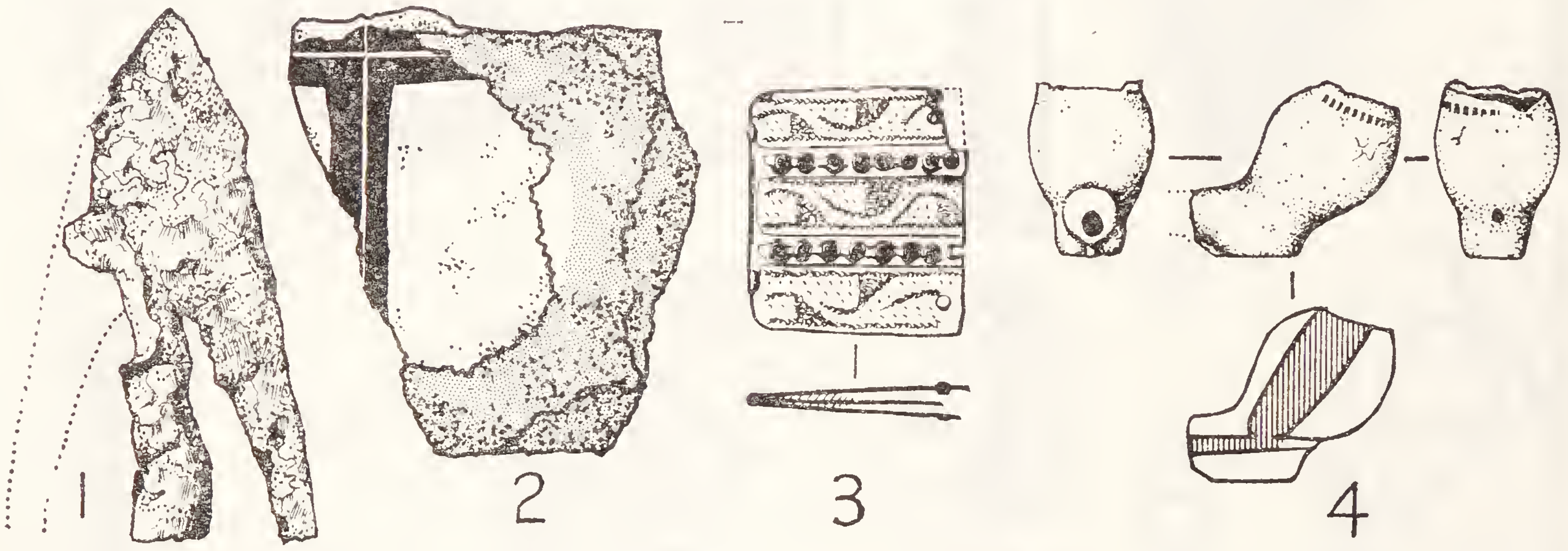

Fig. 13. Small Finds.

5. A small number of uneven stone roofing tiles (undrawn) were re-used as a floor surface outside the north wall of the phase 3 chapel (Fig. 6). The tiles are of micaceous, uneven, grained, shaly formation approximately 10 in. by 8 in. in size and $\frac{3}{4}$ in. in thickness with a crude peg hole of $\frac{1}{2}$ in. diameter. These tiles did not compare with any others found on the site and are more suggestive of the surface quarrying of secondary material prior to the location of a source exhibiting more regular bedding planes. The larger stone tiles (undrawn) found extensively on the eastern site are fine grained and smoothly laminated and up to about 12 in. by 15 in. in size and $1\frac{3}{8}$ in. in thickness with cleanly drilled peg holes of $\frac{1}{2}$ in. diameter. These tiles are in fact consistent with those widely used in the local vernacular roofing tradition.

BONES AND ANIMAL REMAINS

By Janet Best

The bones and teeth from the Otley site belonged almost exclusively to domestic animals. Identification was made with the help of Dr. Ellis Tinsley, Consultant Pathologist at the Airedale District Hospital, Eastburn.

They included:–

Horse – proximal phalanx, tibia and femur
Red Deer – Metatarsal
Young Ox – Metacarpal

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[54] J. E. Parsons, 'The Archaeology of the Clay Tobacco-Pipe in N.E. England', *Arch. Aeliana,* 4th Ser. XLII (1964), p. 233.

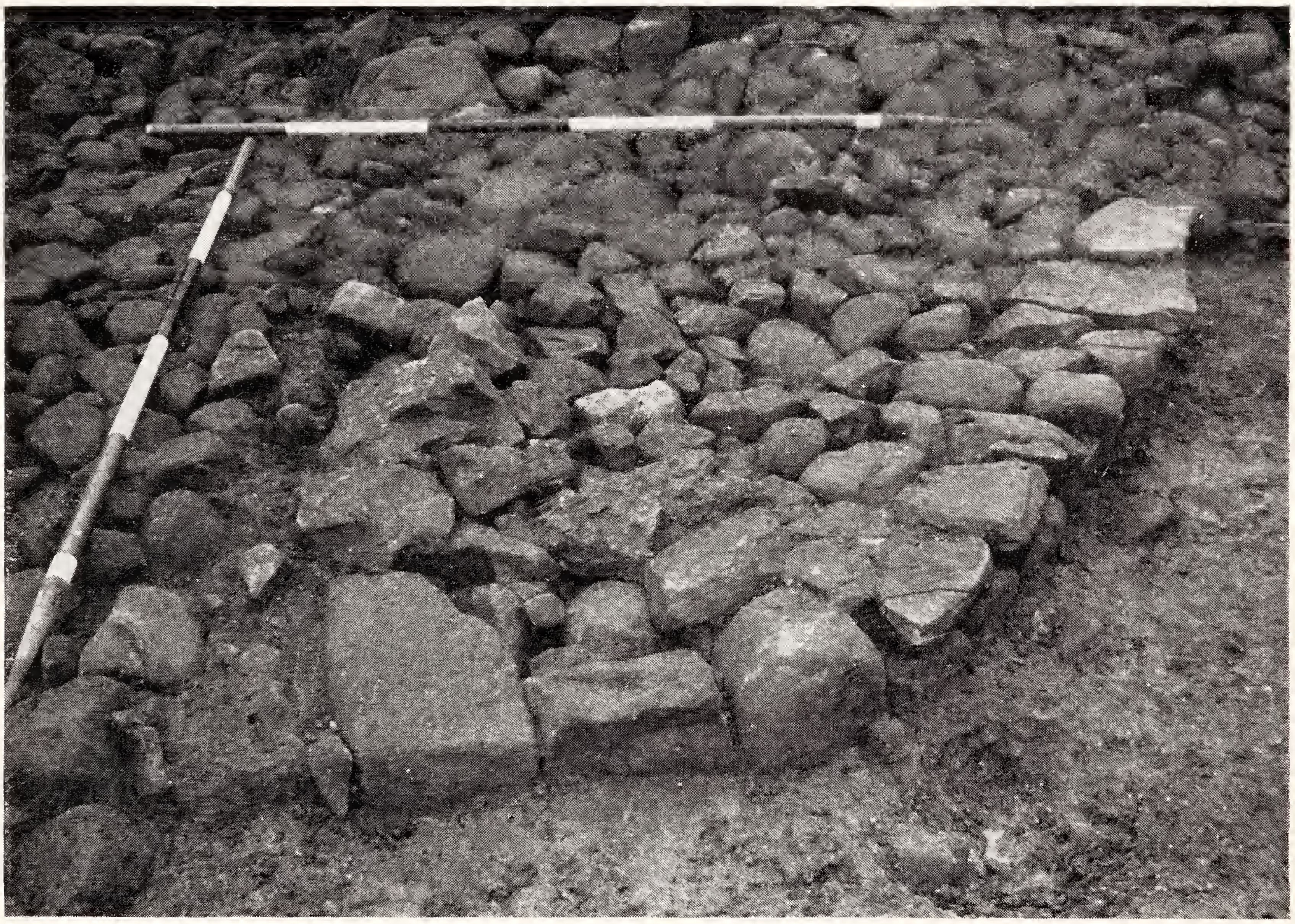

Plate 2a. Base of corner turret. *Ph.* Enid Sheldon

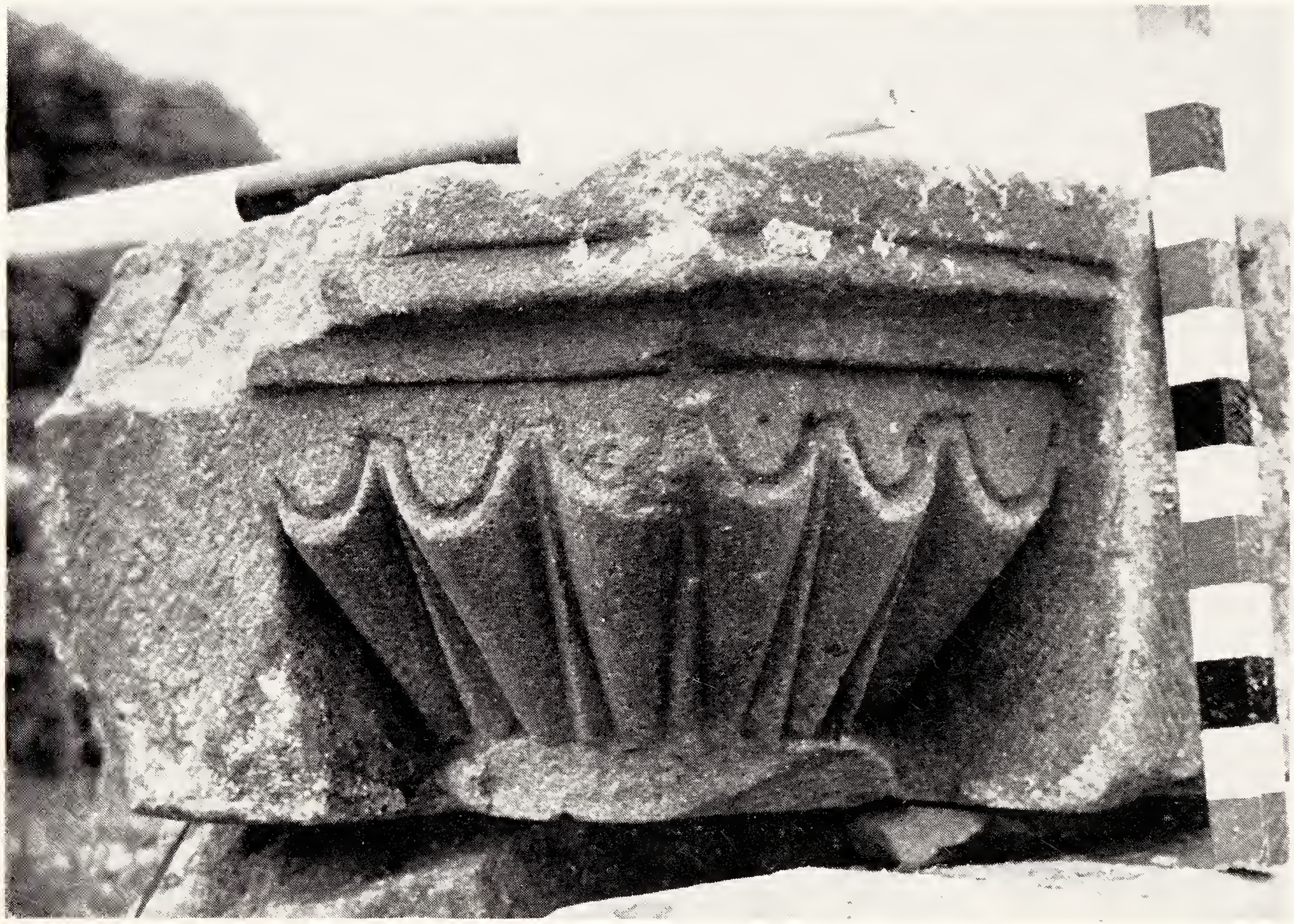

Plate 2b. Scalloped capital, phase 3. *Ph.* Enid Sheldon

Ox – (?) Metatarsal
Part of Sheep's skull
Horn of Goat
Horns of Sheep
Pig's lower tusk
Cat's Humerus
Sheep and Cows' teeth

A skeleton, almost complete, but lacking head bones apart from the left mandible, was discovered in the north-west corner of the site. From the depth at which it was found and the undisturbed position in which it lay, we can date it at any time between the 16th and 18th centuries. Although it was conclusively identified as belonging to the *Caninae* family, the difference between dog and wolf is so slight that we cannot say definitely which animal this is. The overall measurements of the skeleton are 4 ft. in length, excluding the tail, and 3 ft. 6 in. in height. When clothed in flesh and fat it would be more than 5 ft. in length and some 4 ft. in height – larger than a normal size dog but not as large as a cow or horse. This animal was old when it died, the teeth are very worn and the back bones (vertebrae) have the small nodules indicative of rheumatoid arthritis. Wolves were common in Wharfedale in the medieval period.

APPENDIX

BY MARY HALL

28 January 1672[55] Lease by John Barney to Frances Dawson, widow, of one messuagew herein the said Frances Dawson now dwelleth called by the name of the Manor House with all Laith and Stables, Outhouses and Buildings together with one Orchard on the north side of the said Messuage and two Gardens on the south side and one Close of land, meadow or pasture on the backside commonly called Hall Garth and one other close or parcell of ground commonly called Bulman Carrs for 7 years at a rent of £23 p.a.

28 September 1682 Lease by John Barney to Frances Dawson gives Hall Garth as containing by estimation seven acres.

July the 2nd 1683[56] Note of Goods of Mr. John Barney which was left at Otley in the costodie of Mrs. Dawson.

In the Chamber over the parlor next to the scholhouse one range with a locke and kea.
In the Hall Chamber one range and one press with a pertition and lock and kea on it.
In the parlor next to the scholehouse one range.
In the Hall one Long bench.
In the kitchin one range two dressers with boxis and one bench and one glas Case with 4 Shelfes and 5 Long Shelfes over the dressers and one short shelf over the dore with odd Railes and Hokes for Shelfes.
In the Littill parlor one shelf over the dore and twelve in the littill Closset and a good spring lock on ye parlor dour.
In the Milk house three dressers and 3 sides of it with dressers and seaven hangers for shelfes.
In the sceler one large gantre one pare of Hangers for a shelf.
In the Lobbie one littill gantree.
In the Chamber over the littill parlor one rang in the starekase goeing to it one safe with one shelf over it and a lock and one shelf in it.
In the Kitching Chamber one paire of large Hanggers.
In the Appell Chamber 5 Ladders and 2 of them bottomd one Raile with pines in it for hanging any thing on and a good lock and kea on it.
In the next Littill Chamber one Raile with pines in it.
One buckett for the well with a large cheaine belonging to it.
In the Clossit at the Stairehead 14 Shelfes and a hie stoule with a ledge under it with a lock and a key.

The Council of the Society wishes to thank the Department of the Environment for a grant towards the cost of publishing this article.

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[55] Y.A.S., Farnley Hall MSS., DD 146.
[56] *Ibid.*

GIANTS HILL, SWINE: THE EXCAVATIONS OF 1960-61

By W. J. Varley

LOCATION

*Giants Hill, Swine, is an artificial mound situated in the carr-lands of Central Holderness five and a quarter miles to the north east of Hull, at N.G.R. TA/513535. It lies 300 yards due west from the parish church of St. Mary's, Swine and a similar distance to the north of the reputed site of the Nunnery.

THE METHOD OF EXCAVATION

It had been supposed prior to the excavations of 1961–62 that Giants Hill was a burial mound, possibly prehistoric or Danish. Normally in such circumstances one would have used the quadrant method whereby the whole mound is taken down to virgin soil, quadrant by quadrant. However, this particular site is planted with fine trees, so that excavation had to be restricted to selective sectioning. The height, girth and shape of the mound, together with its location in wet, low-lying ground east of the River Hull, well away from the proven burial mounds of the East Riding, made it doubtful that Giants Hill was a barrow. If it were not, then the possibility existed that it might be an earthen support for some kind of vanished superstructure, the foundations of which might be visible in the upper surface of the mound.

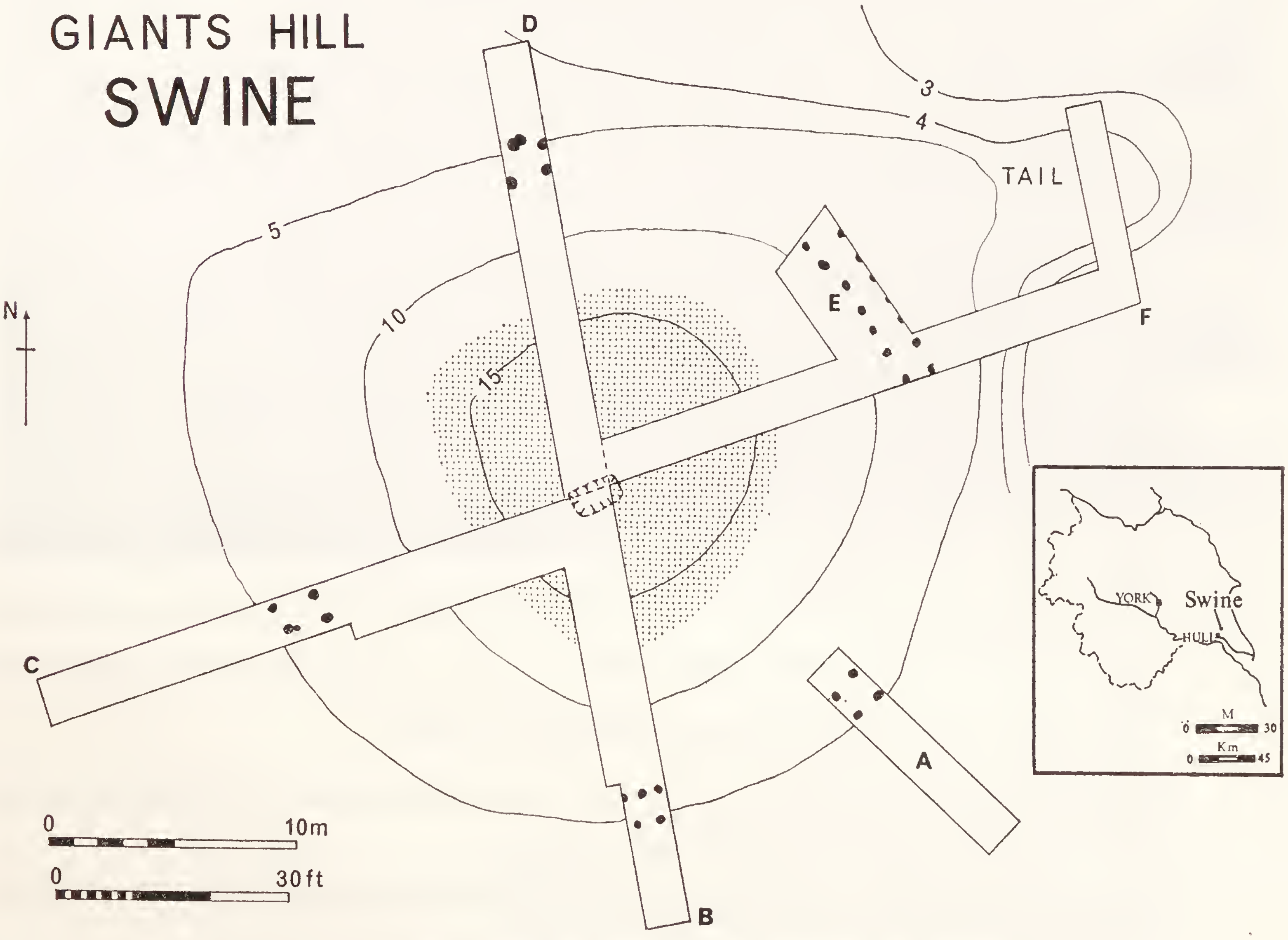

Fig. 1: Plan and location of site. (Heights are in feet above O.D.)

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*See photograph facing p. 172.

In the event, therefore, we began by testing the latter hypothesis first and stripped the whole surface of the mound over a radius of 30 feet, down to a homogeneous clay surface disturbed only by a central hollow no more than five feet wide.

The second stage was to test whether or not the mound was surrounded by a ditch, normally the source of the soil found in barrows. This test was achieved by a series of trenches, A–D on the plan, Fig. 1, around the periphery of the mound, taken down to virgin soil well beyond the point at which any ditch would have been encountered.

Finally, once it had been established that the mound had no ditch, large sections were excavated across the whole mound to establish its structure and to recover any evidence there might be for the provenance of the materials of which it was built, together with any archaeological material relating to its date or function. At the conclusion of the excavation, the site was restored to its original contours, as far as possible, and reseeded.

THE STRUCTURE OF THE MOUND

(Fig. 2 : Sections)

It was firmly established that the entire mound rests upon an ancient land-surface now some two feet above Ordnance Datum. The undisturbed sub-soil, Deposit 1, Fig. 2, yellowish grey in colour and fine-grained in structure, was examined *in situ* by Dr. Penny of the Department of Geology, University of Hull, who confirmed that it formed part of the deposit known as 'Humber Warp', a post-glacial estuarine silt which grades down from the carr-lands of Holderness to the present shore-line on the north side of the Humber estuary. It is a very stiff, sticky, tenacious clay, heavy to work and difficult to drain. On the slightest topographical pretext it creates ground conditions which encourage the formation of peat following the degeneration of the original vegetational cover.

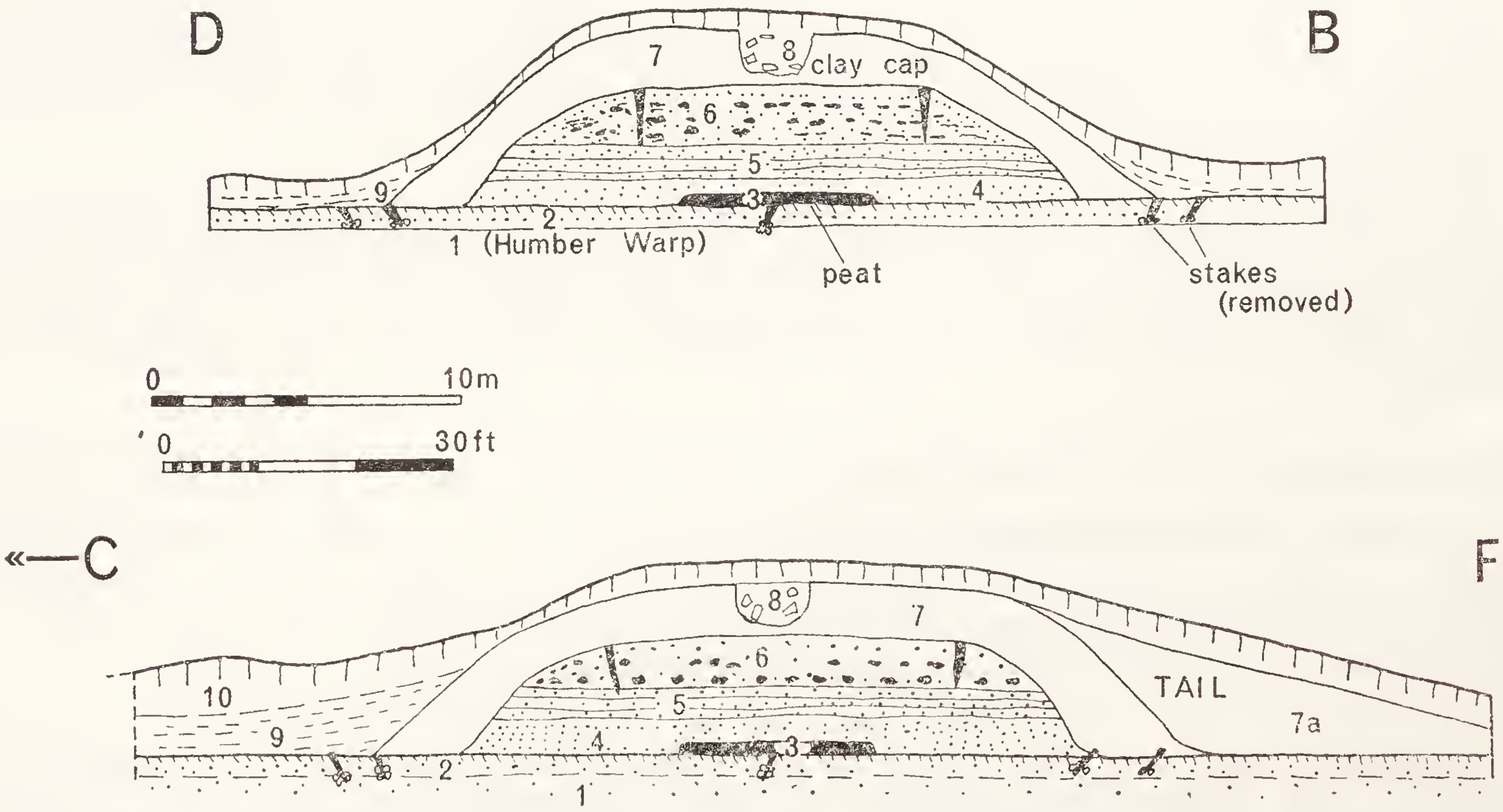

Fig 2: Sections.

Resting on this sub-soil, likewise undisturbed, was a sandier, coarser silt, lighter in both colour and texture, which had clearly resulted from the effect of the weather on the upper surface of the warp once it had been exposed to the air. On top of this leached zone, which was about six inches thick, lay a thin layer of black greasy soil, rich in humus and root-hairs, clearly the land surface which had developed on the weathered surface of the warp once it had been colonised by plants. (Deposit 2, Fig. 2). Wherever it was examined, this land-surface was intact, except where it had been penetrated by stakes, probably driven into it during the setting-out of the mound.

At the very centre of the mound, one such stake, a hazel branch with the side-shoots trimmed off but the bark retained, had been firmly driven into the sub-soil as a centre peg, clearly the first step in its construction.[1] Around this central stake was a series of stake-holes on the perimeter of the mound, arranged in a double ring. The inner stake-ring had a diameter of 40 feet; the outer a diameter of 46 feet. The stakes had been removed before the completion of the upper part of the mound. The infilling of each hole was examined on site with a magnifying glass, and in the laboratory, but no vestige of timber remained, though in each case the outline of the hole and its packing stones were intact. The implication was that the stake rings were guide lines for the subsequent dumping of mound-material. Within the stake circles lay the core of the mound. At the centre on the original land-surface, in a ring with a radius of ten feet, lay a layer of peat now six inches thick. (Deposit 3, Fig. 2).

Above this, over the entire 40-foot radius of the base of the mound was a layer, now two feet six inches thick, which at first looked like peat but which when examined proved to be the Humber warp heavily stained with humus. (Deposit 4, Fig. 2). Above this in turn, up to a height of five feet six inches above the original surface, lay a truncated cone made up of alternate layers of peat and warp. (Deposit 5, Fig. 2). This was topped off by a lens of peat and clay, the latter predominant, whose upper surface had a radius of 15 feet above the original ground surface. (Deposit 6, Fig. 2). On the very edge of this flat surface quite large stakes had been driven into the lower core, then removed. One surmises that these stakes had been used to help consolidate the shape until the materials below had settled and had then been removed to make way for the uppermost layer.

This proved to be a shell of warp without peat, laid over the top five feet of the entire structure. (Deposit 7, Fig. 2). This was the surface the original stripping had exposed. The only place at which this clay shell had been disturbed was in the central depression previously mentioned. This contained brick rubble and lime-shell mortar, the surviving debris of a building with a maximum width of seven feet, inserted into a probably rectangular foundation-trench sunk into the clay shell. The superstructure had been removed so that rain wash had covered the brickwork of what was left of the foundations with an inch or two of silt.

The sections A to D make it clear that the mound had never been surrounded by a ditch. The land surface which underlay the mound continued beyond it in all directions in the same plane with a very slight dip to the south, the regional dip of the upper surface of the warp which is precisely at the level to be expected in this locality.[2]

PROVENANCE OF THE MATERIALS USED TO CONSTRUCT THE MOUND

The absence of a quarry ditch and the peculiar use of peat as a mound-building material, together with the use of large amounts of clay, a heavy and bulky material not to be carted any further than necessary, clearly prompted the question of which was likely to be the source of either or both of the materials used.

A detailed contour survey of the mound and its environs revealed that in the north-east quadrant there lay what might be described as a tail, leading down from the flat summit to the ground below. Section E demonstrated that this tail was as artificial as the rest, consisting of a thick lens of warp deposited over the original land-surface. (Deposit 7a). We followed this tail down to its tip to find that this began at the edge of a pond on the south-east side of the mound. A series of probes established that the pond was dug in the warp and that its volume would provide the amount of clay used in the mound, estimated at about 1200 cubic yards. The existence of such a source and of the tail leading to it made the purpose of the latter quite clear. The tail had been deposited as a gently inclined plane wide enough for a cart to lead clay from the pond, its source, to the top of the mound from which it was spread around the circular summit. The purpose of the clay cap was clearly to hold the shape of the mound and to protect the less stable and durable material, peat, below.

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[1] It was not possible to have C14 tests made, to enable the date of construction to be established.

[2] I am grateful to Dr. Penny for discussing this point.

The source of the peat cannot now be so precisely determined. The cutting of the Holderness Drain[3] at the end of the eighteenth century completely altered the ground conditions in this area, while subsequent liming and draining have likewise discouraged peat formation. But there can be no doubt that prior to these improvements peat easily formed in these low lying carr-lands and can readily be found below the existing surface in much of the area east of the Hull. Moreover, there are references[4] to a turbary at Swine worked by the *frateres et sorores* of the Cistercian religious house and supplying the Friary at Beverley with turves, *i.e.* peat-blocks. Such a peat-field could well have lain between Giants Hill and the reputed site of the Nunnery.

DATE OF CONSTRUCTION

No surviving documents have been traced which relate specifically to Giants Hill.

Complete reliance, therefore, has to be placed on archaeological methods of dating.

The material from Giants Hill[5] consists of:–

(A) Pottery recovered from the basal layer of peat in the centre of the mound resting on the original ground surface and effectively sealed by six successive deposits comprising 1400 cubic yards of peat and clay.

(B) Pottery from the body of the mound sealed by the clay capping of Deposit 7, away from root disturbance.

(C) Pottery, brick and tile from above the clay capping on top of the mound, but not sealed.

The schedule (pp. 146-7) describes the pottery in the material from sealed deposits, i.e. the pottery listed as (A) and (B) above is relevant to the dating of the mound.

The pottery is not homogeneous, at any level, but the mixture is constant, at least so far as its time-range is concerned, at all levels, including even the material from the top of the mound. The earliest could be from the thirteenth century. The latest is unquestionably the Humber ware to which more than half the identifiable sherds can be assigned. At present there are two known kilns, at Cowick, near Snaith, and Holme-on-Spalding Moor. The former was dated by thermo-remanent magnetism to the late fifteenth or perhaps early sixteenth century. However, sites at Etton have yielded what is clearly recognisable as Humber ware in contexts which could be fourteenth century. It is significant that no sherds of Cistercian ware have been found at Giants Hill. On these grounds the upper limit of date may be put at A.D. 1475 with a lower limit at about 1350; the final bracket is 1350–1475. More precise than that one cannot be, with present knowledge.

As this range of dates applies to all the mound from top to bottom, one must assume that it is a homogeneous structure. The internal layers are merely stages in construction.

[3] June Sheppard, *East Yorks. Local Hist. Soc.*, II (1966).

[4] T. Thompson, F.S.A., *The History of the Church and Priory of Swine* (1824).

[5] The whole of the pottery is now deposited in the Hull Museum, accessioned under reference no. 130/61 or /62. It has been seen and examined by Mr. J. G. Hurst and Mrs. J. Le Patourel who have compared it with the Museum's other collections from Wawne, Riplingham, Holme-on-Spalding Moor and Humber Street, Hull. To these have been added the material from excavations by the writer at Temple Garth, Etton (1250–1536), the Old Enclosure, Etton (twelfth to fifteenth centuries), Woodhall Manor, Beverley (fourteenth and fifteenth centuries) which will eventually be housed in Hull; also by courtesy of Mr. J. E. Bartlett I have read material by Mr. P. Mayes on his excavations at the multiflued kiln at Holme-on-Spalding Moor, to be published in the Hull Museum's Journal. The material from excavations by the writer at Castle Hill, Almondbury, housed at the Tolson Memorial Museum, Huddersfield is also relevant, because pottery similar to the bulk of the sherds from that prolific site, coming from the kilns at Upper Heaton (excavated by Mr. T. G. Manby), has turned up unexpectedly at Swine.

PURPOSE AND PARALLELS

The excavations have shown that Giants Hill was not a burial mound, nor can it be regarded as a motte – an earthwork of the Norman period erected to support a wooden structure occupied for military purposes.

Mr. S. E. Rigold has proposed that mounts such as Giants Hill should be called 'Park Mounts' because they were frequently found in deer parks and other such enclosures where it was expedient to maintain a look-out.[6] Examples of this kind are known to the author at The Mount, Etton,[7] a mound almost exactly the size and shape as Giants Hill, standing within the deer park of the De Etton family from the reign of Henry II to the fifteenth century, and, probably, at Dalton in the park of Dalton Hall, the seat of Lord Hotham. From a third, Mount Pleasant at Elvington, has come 'Humber Ware'. Dr. J. N. L. Myres recalls a pair near Newbury and no doubt there are many others wherever Norman families established deer parks.[8]

However, it hardly seems appropriate to include Giants Hill in a category of 'Park Mounts', for there is no park. What there was, however, was a religious house, initially a nunnery established in A.D. 1153, then housing nuns and friars and lasting presumably to the Dissolution of 1536.[9] The occupants worked a turbary and this would appear to have been the source of the peat contained in Giants Hill. The pottery-range, from the 13th to the 15th century, then becomes explicable since these dates fall comfortably within the period when the original nunnery was occupied by both sexes. If this view is correct, then Giants Hill could well have had the function of a 'Park Mount' in that it served as a look-out post.

Clearly, Giants Hill represents a category of medieval earthwork well worth excavation elsewhere.[10]

SCHEDULE OF POTTERY

(**denotes sherds illustrated* in Fig. 3).

N.B. To avoid repetition, the following description applies to the main recognisable fabrics.

Humber ware: Normally pink on both faces with grey core. Sometimes, the inner face is dark grey. Glazes range from light mottled green to occasional dark green mixed with honey-coloured glaze sometimes found alone. (*14th–15th century*).

Upper Heaton ware: Normally yellow on both faces, occasionally pinkish; very heavily gritted on outside with very sharply cut rims and bases. (*13th to 15th century*).

Staxton-Potter Brompton ware: Pinkish-yellowish-grey with sandy feel, grey core: types fully described in the analysis by Mr. J. G. Rutter of the Medieval pottery in the Scarborough Museum (Scarborough Museum Publication). (*13th to 14th century*).

A. *Objects from the peat base of the mound* (Deposit 3).

1.* Circular rim, narrow flat top, slight external girth-groove below rim, sharply undercut. *Upper Heaton.*
2.* Circular, flat-topped square-sectioned rim. *Upper Heaton.*
3. Part of shoulder of pitcher with applied decorated strip running vertically. *Upper Heaton.*
4.* Flat-topped rim with rectangular section; external girth-groove just below rim top. *Staxton.*
5. Basal angle, thumb-impressed underneath. *Humber.*
6. Fragment of knife-cut base. *Humber.*
7.* Fragment of rim of thin hard red ware, purplish on outside with a series of notches running round girth just above carination.
8.* Circular rim decorated on outside with incised wavy lines, over-glazed in thin brown glaze. ? *Humber.*

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[6] In the course of discussion following the author's paper given before the Society of Antiquaries, 13 November 1969.

[7] Publication forthcoming.

[8] In discussion, see note 6.

[9] Dugdale, *Monasticon*, V, p. 494.

[10] *Acknowledgements.* I have to acknowledge the assistance rendered by Mr. F. H. Johnson of Abbey Garth, Swine and the facilities placed at my disposal by my employers, the Hull L.E.A., and my former colleague, Dr. Bibby, Principal of Hull College of Education. I am deeply indebted to Mr. J. E. Bartlett, Director of the Hull Museums for continued assistance and to Mr. J. G. Hurst and Mrs. J. Le Patourel for their help and interest, but above all I am indebted to the founder members of the Hull College of Education Archaeological Society, who began and completed this, the first of their six excavations of medieval sites.

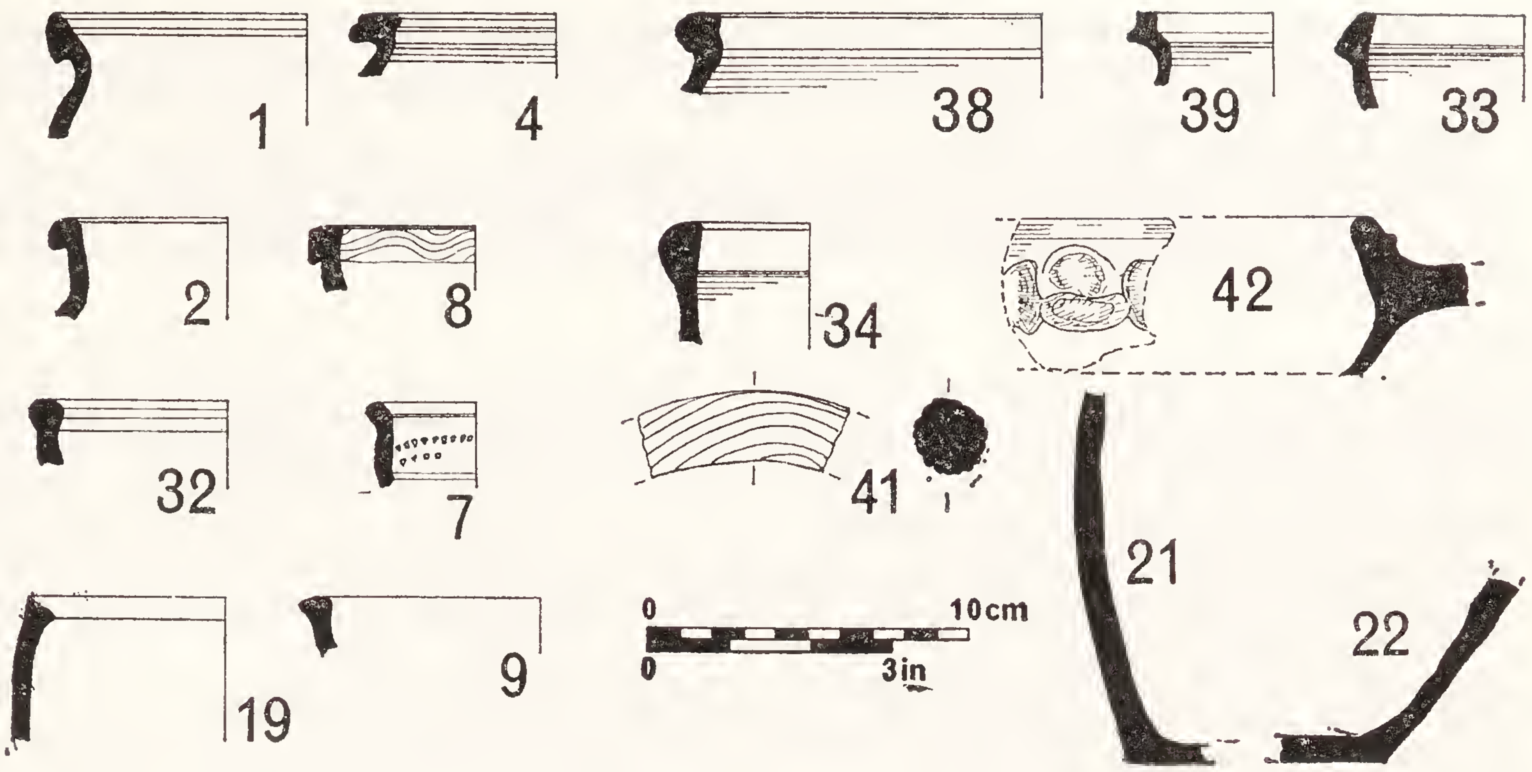

Fig. 3: Pottery.

9.* Circular rim, flat top and outside glazed olive green. *Humber.*
10. Body sherd, very thin with external raised strip running vertically, mottled green. *Humber.*
11. Two body sherds in fabric which matches another pair found in Section E. (Deposit 6). *Humber.*
12–15. A group of identical thin body sherds, glazed outside in mottled green and honey. *Humber.*
16. Body sherd in thin fabric, glazed outside, mottled green and honey. *Humber.*
17. Same fabric as above but with concentric shallow grooves around girth. *Humber.*
18. Body sherd glazed both sides in mottled green and honey. *Humber.*
19. Flat-topped rim and outside glazed in thin honey colour. *Humber.*
20. Body sherd with concentric grooves glazed olive green. *Humber.*

B. *Pottery from the core of the mound below the clay capping.* (Deposits 4 to 6).

21.* Fragment of base and side, glazed outside in thin honey-coloured glaze. Lying on original ground surface, Section D, 32 ft. from centre of mound. *Humber.*
22.* Fragment of base and side, hard-fired, base sharply knife-cut. Deposit 4, Section D, 30 ft. from centre. Identical with pottery from Woodhall Manor, Beverley. *Humber.*
23. Fabric and glaze identical with Page 22. Section D, Deposit 4, 32 ft. from centre. *Humber.*
24–25. Base and side fragment, Section D, Deposit 5, 8 ft. from centre. *Humber.*
26. Basal angle with thumb-impression on outside. Splashes of honey glaze. Section B, Deposit 5, 20 ft. from centre. *Humber.*
27. Basal angle with thumb impression on underside, splashes of honey glaze. Section B, Deposit 5, 30 ft. from centre. *Humber.*
28. Sharply-cut basal angle, flat, knifed base. Section B, Deposit 5, 32 ft. from centre. *Upper Heaton.*
29. Fragment of out-turned rim, Scarborough Type 37, Section D, Deposit 4, 40 ft. from centre. *Staxton.*
30. Flat-topped rectangular rim with deep external girth groove. Section D, Deposit 4, 38 ft. from centre. *Upper Heaton.*
31. Flat-topped rectangular rim, external girth groove, Section D, Deposit 4, 38 ft. from centre. *Upper Heaton.*
32.* Spout of jug; inside face of rim in same plane as body, outside face of rim ovoid. Section D, Deposit 6, 43 ft. from centre. *Humber.*
33.* Circular rim as above, with girth cordon at base of rim. Section D, Deposit 6, 38 ft. from centre. *Humber.*
34.* Circular rim as above, patch of honey glaze below rim. Section D, Deposit 6, 38 ft. from centre. *Humber.*
35. Rim rounded-top, bevelled outer edge, honey-glazed. Section D, Deposit 6, 38 ft. from centre. *Humber.*
36. Flat-topped rim, thickened at top edge, glazed externally green and honey. Section B, Deposit 6, 38 ft. from centre. *Humber.*
37. Thickened rounded rim glazed on top and inside, green and honey. Section D, Deposit 6, 41 ft. from centre. *Humber.*
38.* Everted rim, rounded, badly corroded. Section D, Deposit 6, 39 ft. from centre. ? *Humber.*
39.* Flat-topped circular rim in smooth buff ware, concave rim profile with lower edge wider than upper, patches of honey glaze on outer edge of rim. Section D, Deposit 6, 40 ft. from centre.
40. Flat-topped thickened rim, slightly out-turned in same fabric as 39, same *locus.*

41.* Circular handle, 1 in. diameter, twisted corrugations. Site E, Deposit 3, 37 ft. from centre. N.B. This type of handle is a variant of the normal circular corrugated handle (Scarborough type 2/3) characteristic of late thirteenth and fourteenth centuries, normally absent from fifteenth century pots. ? *Humber ware.*

42.* Upper end of ovoid strap-handle springing from neck of jug. Thumb impressions on each side and in centre of oval where it joins the neck. Section D, Deposit 6, 41 ft. from centre. *Humber.*

43. Strap handle, outer edge s rounded, inner flat, face outer face dished. Section A, Deposit 6, 40 ft. from centre. *Humber.*

Not numbered

In addition there were 25 body sherds found in Sections D and E in Deposits 7 or 7a. All except one are in Humber ware, 23 are green-glazed externally, one in dark green glaze, and one in light brown. It is impossible to say how many separate vessels are involved in this group.

C. *Pottery from above clay capping, unsealed*

44. Out-turned rectangular rim, concave on inner face. *Upper Heaton.*
45. Out-turned expanded rectangular rim, rounded top, sharply cut lower edge. *Upper Heaton.*
46. Flat-topped square rim with tiny patches of honey glaze inside. *Humber.*
47. Basal angle with thumb impression outside, mottled green glaze. *Humber.*
48. Body sherd, honey and green glaze outside, vertical strips outside. *Humber.*
49. Body sherd in dark grey calcite-gritted ware. Possibly not medieval.

D. *Schedule of Iron Objects,* all from on top of clay capping, unsealed (Fig. 4)

1. Thin blade with rivets protruding from both sides.
2. Iron strap-hinge(?) with central perforation on left-hand margin.
3. Fragment of basal angle of iron vessel with flat base and bulging sides (?).
4. Iron nail, $2\frac{3}{4}$ in. long, head squarish, $\frac{5}{16}$ in. wide.
5. Part of nail with ovoid head $\frac{3}{4}$ in. long, $\frac{1}{2}$ in. wide.
6. Head of small mushroom-headed nail $\frac{5}{8}$ in. long.
7. Fragment of small, square-headed nail $\frac{3}{8}$ in. wide.

(Also three fragments of nail shank or indeterminate metal).

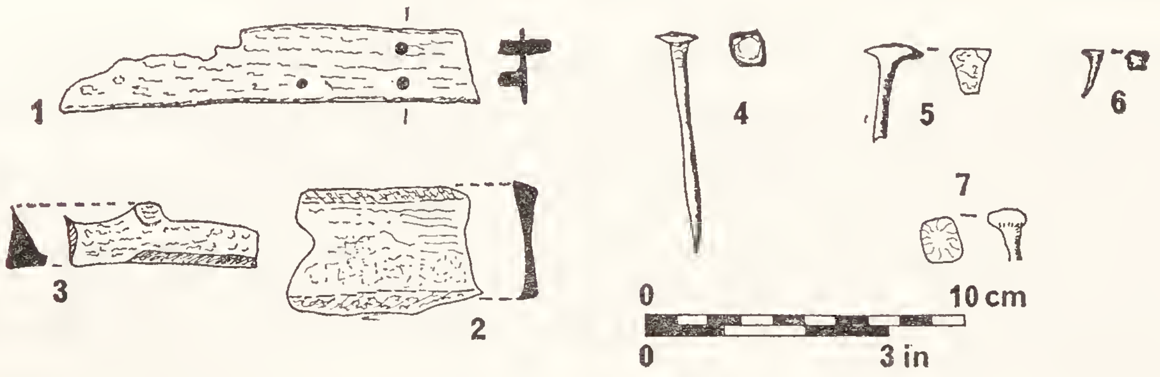

Fig. 4: Iron objects.

AN EAST YORKSHIRE LAND SURVEYOR: WILLIAM WATSON OF SEATON ROSS

By A. Harris

Abstract This paper discusses the activities of William Watson (1784–1857), a Yorkshire farmer, land surveyor, map maker and amateur astronomer. Attention is first drawn to Watson's family background. Reasons are adduced for believing that this may have influenced both the nature and geographical distribution of his early commissions as a land surveyor. The paper then describes Watson's later work and in particular his large-scale plans of Pocklington and Market Weighton. The distinctive features of these are noted and an attempt is made to assess their value to the historian.

Although Yorkshire maps and their makers have attracted the attention of scholars for many years, certain aspects of the history of cartography in the county remain comparatively little known. In particular there is still much to be learnt about the origins and activities of the local land surveyors whose maps, as J. B. Harley has remarked, not only provide a detailed view of the contemporary scene but also 'mirror the diversity of the landscape as a whole'.[1]

Most of the estate, tithe and enclosure maps which have survived were the work of professional land surveyors. Like Joseph Osborne, who was active in Hull and Bridlington during the second half of the seventeenth century and Edward Geldart, whose splendid map of South Cave illustrates eighteenth-century estate mapping at its best, some of these men are known today through the evidence of a mere handful of maps.[2] Others, among whom might be mentioned Joseph Dickinson in the eighteenth century and Gregory and Edward Page in the nineteenth, are well represented in the map collections of Yorkshire libraries and archive offices.[3]

A highly accomplished land surveyor not infrequently found that his skills were in demand in many parts of the county, and even beyond,[4] while a well-established country business like that of the Pages in Beverley would normally serve an extensive district.[5] Occasionally, however, a gifted amateur appears to have been pressed into service to carry out a particular commission. John Philliskirk, who was assistant master at Kilham School in the early years of the eighteenth century, falls into this category.[6] So too in all probability does William Parker, a solicitor's clerk, whose map of Bessingby, near Bridlington, is dated 1846.[7] In the absence of working papers or detailed biographical material, it is difficult to trace the diverse backgrounds of these men and others like them, both amateur and professional, so that many remain at best shadowy figures.

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[1] 'Estate Maps', *The Amateur Historian*, vol. 7 (1967), p. 228. See also Arthur Raistrick, *Yorkshire Maps and Map-Makers* (1969), pp. 65–8.

[2] Photo-copies of several of Osborne's maps are housed in the Local History Library, City Libraries, Hull. References to his work occur in [E]ast [R]iding [R]ecord [O]ffice, DDCC 139/66. I am indebted to Mr. G. de Boer for information about Osborne. Geldart's map is E.R.R.O. DDBA 4/31.

[3] Notes on Dickinson appear in Kenneth J. Bonser and Harold Nichols, 'Printed Maps and Plans of Leeds, 1711–1900', *Thoresby Soc.*, xlvii (1958), p. 130. In addition to the maps listed by Bonser and Nichols, there are examples of Dickinson's work at Castle Howard (Grimthorpe, E.R., 1717) and in the E.R.R.O. (Howsham, E.R., 1705). Gregory and Edward Page are noted in Francis White and Co., *General Directory and Topography of Kingston-upon-Hull, etc.* (1851), p. 593. Examples of their work are: Sherburn, E.R., 1852, by Gregory Page (North Riding Record Office, ZDS/p) Brandesburton, E.R., 1842, by Edward Page (City of London Record Office, M6c). Both men worked for the Tithe Commissioners. Their involvement in enclosure is illustrated by E.R.R.O. DX 68.

[4] E.g. Jonathan Teal, of Leeds, who made a fine map of Skidby, E.R., in 1775 and returned to the village twenty years later as enclosure commissioner. He was also active in the North Riding and elsewhere (Bonser and Nichols, *op. cit.*, p. 143; Public Record Office, DL 42/212). There is a copy of Teal's map of Skidby in Hull Reference Library.

[5] Some indication of the distribution of professional surveyors is provided by directory entries.

[6] E.R.R.O., DDDU 12/53, 54.

[7] E.R.R.O., DDCV 241, parcel 114.

Although perhaps unusual, the career of William Watson of Seaton Ross nevertheless throws some light on the background and activities of a Yorkshire land surveyor during the first half of the nineteenth century.[8] Even if this were not the case, the wonderfully detailed plans of Market Weighton and Pocklington which Watson made towards the end of his long life deserve to be better known. They provide a remarkable glimpse of these places in the early Railway Age and in so doing make a valuable contribution towards our knowledge of the small market town in Victorian Yorkshire.

Watson was born in Seaton Ross, within the East Riding, on 17 May 1784. His parents, John and Sarah Watson, had married in 1777 and William was their fourth surviving child.[9] Both parents had themselves been born in the village, William's father in 1755 and his mother in 1758. In common with most of the inhabitants of Seaton Ross, the Watson family had an interest in the land. John Watson was a farmer, like his father and grandfather before him: his wife, formerly Sarah Wilberfoss, came from a farming family.[10]

Most of John Watson's land formed part of the estates of the Constable Maxwells of Everingham, whose extensive Yorkshire properties included much of Seaton Ross. By local standards Watson's was a large farm, consisting in 1798 of some 300 acres of old enclosure, which was held on lease at an annual rent of £162.[11] He also occupied a small freehold estate which had been in the family's hands for many years. This provided a few extra acres and carried grazing rights for livestock on the village commons.[12] Churchwarden, collector of the Land Tax and well-to-do tenant, John Watson was indeed 'a most respectable farmer.'[13] At his death in 1834 he was still both freeholder and leaseholder and was able to provide for the comfort of his wife and, after her, their children.[14] Not the least of John and Sarah Watson's achievements was their family of eight sons and three daughters,most of whom by 1834 were either established on farms of their own or joined by marriage with a farming family. William Watson's background was thus both rural and respectable.

Until 1838 he too was a farmer, though he combined that activity with surveying and the making of sundials. The enclosure of nearly 800 acres of land in Seaton Ross between 1811 and 1814 had been followed by the re-organisation of old farms and the creation of new ones.[15] Among the latter was a holding of 138 acres on the former common. In March 1812 this land was leased by Marmaduke Constable Maxwell to a John Watson, who was probably William's father but may have been an elder brother of the same name.[16] William was associated with the venture from its inception, however, and was soon in occupation of Seaton Lodge (or Common Farm as it was then sometimes called) as legal tenant. During 1812 he set about the task of ridding the land of the heath and furze with which it was largely covered and by 1834, when only a field or two of rough pasture marked the site of the old common, Seaton Lodge had become a productive arable farm.[17] Had Watson achieved nothing else, the reclamation of this land would be sufficient to earn for him a modest place in any account of agricultural improvement in the Vale of York.

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[8] The Revd. H. E. C. Stapleton, Rector of Skelton, York, and formerly of Everingham, first drew my attention to William Watson. I am grateful to Mr. Stapleton for assistance during the preparation of this paper.

[9] Unless otherwise stated, the biographical details which follow are derived from the parish registers of St. Edmund, Seaton Ross. The Revd. P. S. Thornton was most helpful in permitting access to these.

[10] E.R.R.O., Land Tax (Seaton Ross), 1788; DDEV 21/81. Burial register Seaton Ross, Robert Wilberfoss, 5 January 1791.

[11] E.R.R.O., DDEV 21/322.

[12] E.R.R.O., DDEV 21/96, 97; DX 27.

[13] The description occurs in the burial register of St. Edmund's, Seaton Ross, 9 February 1834. See also Land Tax (Seaton Ross) 1791, and DDEV 59/52.

[14] The most informative sources on these matters are John Watson's will (proved May 1834) and the administration particulars of Sarah Watson (16 April 1834). These documents are in the [B]orthwick [I]nstitute of [H]istorical [R]esearch. For the leasehold see E.R.R.O., DDEV 68/49.

[15] Registry of Deeds, Beverley, Book CQ, pp. 358 ff; E.R.R.O., DDEV 21/14.

[16] E.R.R.O., DDEV 21/14; 68/46.

[17] E.R.R.O., DDEV 59/92; Henry Stapleton, *A History of St. Edmund's Church and the Village of Seaton Ross* (1965), p. 34.

The strength of family ties and a mutual interest in the land held most of the Watson brothers in the immediate vicinity of Seaton Ross. Not far from Watson's own fields were those of his brothers James and Charles, while at Thorpe-le-Street and Holme-on-Spalding Moor, a mile or two distant, John, Thomas and Henry Watson occupied yet other farms.[18] Of William's brothers only Robert, the eldest, left the district permanently.[19] The others migrated only a short distance, if indeed they moved at all, and eventually all were buried in Seaton Ross. Several of John Watson's sons, including William himself, eventually followed his example and served their parish either as churchwarden or in some other capacity;[20] while one at least, more affluent perhaps than his brothers, remembered its poor in his will.[21]

Watson's background, and more particularly his years as a farmer, are relevant to his work as a surveyor, for they best explain why almost all his maps are of places that lie within a short distance of Seaton Ross. Indeed Watson himself claimed in 1824 that he was 'ne'er . . . a Week out of Seaton'.[22] Yet by this time not only had he acquired the skills of draughtsman and surveyor, but he was able to design and set up sundials:

I am a Farmer, which I tell,
I also know Surveying well,
Dials I've made many sorts,
At School I did not learn these arts,
Astronomer some do me call,
I live at SEATON DIAL HALL

Watson's interest in sundials, which was to find expression in *Dialling Diagrams*, a short treatise on the subject, had by 1824 already been turned to practical ends.[23] His farmhouse had been embellished with sundials (giving rise to the name Dial Hall, by which it is still known), and he had presented to the parish church of St. Edmund, Seaton Ross, the dial which occupies a place above the south porch there. And for those who wanted them, dials were available to order:

If any Person wants a Dial,
Apply to me I'll make a trial,
I now can make for any man,
Upon a much improvèd Plan,
Five Guineas is the price of one,
And each mile distant Half a Crown[24]

How Watson gained a taste for, and eventually mastered, these skills is not certain. While still in his twenties, however, he was capable of 'measuring' on behalf of his Everingham landlord, and it is possible that much of his expertise as a surveyor, at least, was gained on the Constable Maxwell estates.[25] Most of his commissions before 1838 certainly appear to have come from Everingham.

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[18] Will of John Watson and Administration, Sarah Watson, B.I.H.R. Fuller particulars are available in the Everingham estate papers, since most of the farms were Constable Maxwell properties.

[19] Robert Watson farmed at Seaton Ross for a time before emigrating to the United States. In 1834 he was described as 'of Perry near Geneva in America, Yeoman'.

[20] Several returns for the Land Tax prepared by William Watson survive in the E.R.R.O. (e.g. 1822, 1823). They are distinguished by their neatness and bold script. Watson was also a churchwarden.

[21] Henry Watson, who died at Thorp Arch in 1873. His estate was valued at less than £3,000 (will, proved 8 April 1873, District Probate Registry, York.) His gift of £150 to the poor of Seaton Ross is recorded in the church. The charity is still distributed annually.

[22] In some lines of interesting but indifferent verse dated 18 November 1824. The original is in the possession of Miss Evelyn Turtle of Irlam, Lancashire, who very kindly allowed me access to it. Punctuation has been added in these extracts. Watson composed other verses in 1824 and may have been responsible also for some of the epitaphs which appear in Seaton Ross churchyard. His own tombstone carries the inscription:

'At this Church I so often with pleasure did call, that I made a Sun Dial upon the Church wall'.

[23] William Watson, *Dialling Diagrams with explanations*, Pocklington (2nd ed. 1854), published by John Forth. Forth appears on Watson's map of Pocklington (1855) as a printer. Neither the British Museum nor the Bodleian Library has a copy of the first edition, the date of which is unknown. The book does not appear in the bibliography of Frank W. Cousins, *Sundials*, London (1969).

[24] Verses. 1824. The faint remains of a sundial are still visible at Dial Hall. A large sundial on Dial Cottages, Seaton Ross, is probably by Watson. It is likely that he made other dials also (see p. 153, note 42).

[25] E.R.R.O., DDEV 59/56.

The earliest work which has been identified as Watson's is dated 1813 and depicts a number of closes in Seaton Ross.[26] From 1817 there is a survey of an estate in Bielby, a neighbouring village, and from the following year a more elaborate map showing old enclosed grounds in Market Weighton.[27] A copy of an earlier map of Arras by Samuel Dickinson is dated 1823.[28] Entries in the account book of William Gosford, the Everingham land steward, show that Watson made other maps during his years at Dial Hall, though these have not so far been identified. It must be admitted that the maps themselves are unremarkable. Though apparently surveyed with care, they are cartographically competent rather than distinguished. It is likely that they were produced in response to the sort of commission that in 1835 earned for Watson a fee of £5 from William Gosford: they were not ambitious, but they met an immediate need.[29]

Much the most interesting of Watson's maps date from his later years, when he had ceased to farm Dial Hall. After his brother George had taken over the farm in 1838, Watson moved to York.[30] He did not spend very long there, however, and by 1845 was living in Pocklington and practising as a land surveyor.[31] The following year found him in Market Weighton, where he was still living in 1848, when he is described as a surveyor of roads.[32] By 1851, however, he had returned to Pocklington, where he was to spend much of the remainder of his life.[33] The modest house which he occupied there in George Street may still be seen, outwardly little changed from his own day.

Although Watson is sometimes described after 1838 as a retired farmer, he is usually referred to as a land surveyor, a description that is certainly more appropriate to his activities during these years. The Tithe map of Humbleton, in Holderness, which is signed 'W. Watson' and dated 1845, may be his work,[34] while the plan which illustrates Easton's *Directory of Pocklington* is almost certainly Watson's.[35] Although lacking a signature, the lettering, colour values and ornamentation of this plan all closely resemble those of maps known to have been made by Watson after 1838. Moreover, like the plans of 1848 and 1855 which are discussed below, it reveals a keen eye for architectural detail. Outbuildings are separately distinguished and an individual symbol is assigned to thatched roofs. The height of each building to the eaves is indicated by the scale of the drawing. The plan (which is decorated with a sketch of Pocklington parish church) also sets out the town's latitude and longitude in meticulous detail.[36] Together with the *Directory*, it provides a comprehensive view of Pocklington on the eve of the local Railway Age.[37]

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[26] *Ibid.* Although Watson's name is given, the handwriting suggests that an original sketch may have been copied by the Everingham land steward. Five closes occupying 6 acres are depicted.

[27] E.R.R.O., DDEV 6/9, 'Plan of an Estate at Bielby the property of M. C. Maxwell Esq. Surveyed March 1817 by William Watson' 3 chains=1 inch approx; E.R.R.O., DDPY 14/2 'Market Weighton Old Inclosure' 3 chains=1 inch, signed William Watson, Seaton Ross, and dated December 1818.

[28] 'A Map of Arras Farm in the Township of Market Weighton' surveyed by S. Dickinson 1803, copied by William Watson 1823 (E.R.R.O., DDEV 70/9).

[29] The following entry appears on 6 October 1834 in the Steward's Account Book for 1825–1845: 'William Watson for making Plans' £5 (E.R.R.O., DDEV 56/45).

[30] Stapleton, *op. cit.*, p. 34. The *Memorandum Book* referred to by Mr. Stapleton in his history of Seaton Ross, and at one time in the church there, is now in private hands and inaccessible. I am grateful to Mr. Stapleton for giving me details of its character and contents.

[31] Easton's *Directory of Pocklington* (1845) shows that Watson was then living at 8, West Green. I am indebted to Mr. D. R. J. Neave for this information.

[32] F. White & Co., *General Directory of Kingston upon Hull, and the City of York* (*1846*), p. 457; *Slater's Royal National Commercial Directory . . . of the Counties of Chester, Cumberland . . . Westmorland and York* (1848), 'Yorkshire', p. 322.

[33] P.R.O. HO 107/2357, Census of Population (1851).

[34] 'Plan of the Township of Humbleton in the parish of Humbleton in Holderness'. Scale of chains, 3 chains to 1 inch. B.I.H.R., RXIII 481 L.

[35] 'A Plan of the Town of Pocklington in the East Riding of Yorkshire', November 1844. Scale of chains, 22 yds. to 1 inch. Buildings shaded and stippled, roads yellow, water blue, grassed areas green. Published and sold at Easton's Printing Office, Pocklington. S. Straker, 118 Bishopsgate St., London, lithographer. There is a good copy in Hull Reference Library. E.R.R.O., DDPY 9/3, is inferior.

[36] The same is true of Watson's plans of 1848 and 1855. Watson's passion for precise detail is shown by his drawings of Seaton Ross, referred to below. Not only do these indicate when a building was erected, but they show also its distance from the street and (in miles, chains and yards) its distance from Pocklington.

[37] The line between York and Market Weighton *via* Pocklington was opened in 1847.

A plan of Market Weighton followed in 1848.[38] Published at a scale of 21 yards to the inch, it was lithographed by William Monkhouse, of York, and was available in both a 'plain' edition at five shillings and a coloured version at six shillings.[39] Sales were handled on Watson's behalf by William Boast, a local bookseller.[40] In spite of its considerable size (56½″ x 19½″ approx.), the plan shows only the built-up area of Market Weighton: the extensive rural district which formed part of the ecclesiastical parish is omitted. An alphabetical list of streets and yards together with caption, linear scale and north point appear on the plan. There is also a handsome drawing of the parish church of All Saints.

For the buildings Watson uses a device of which he was evidently fond, since he was to employ it also in his 1855 plan of Pocklington and in the unpublished sketches of Seaton Ross which appear in his note book.[41] Each building is carefully drawn in elevation and provides, together with its neighbours, a pictorial representation of the built-up area of the town. Only the parish church is shown in plan, possibly because Watson had included a sketch of it elsewhere. He may, however, have wished to demonstrate his skill as a draughtsman. This he does, within the limitations of his scale, by showing the internal features of the church (chancel, vestry, school room, etc.) in detail. A close attention to small but significant points of detail is apparent also in the insertion of blocked window spaces and in the drawings of the bow windows which distinguish some of the shops.[42] Outbuildings and thatched roofs are shown, together with the lines of railways and the façade of the town's new railway station. Even Market Weighton's 'Gas House' and gasometer appear to have been drawn with affection. Not the least interesting features of the plan are its indications of ownership and tenancy and the notes which in some cases describe occupations.

It would be of interest to know the source of Watson's inspiration. He himself claimed that his plans of Market Weighton (1848) and Pocklington (1855) were the only ones of their kind to be published.[43] Although this may have been true in a literal sense, at least one well-known street guide had by 1848 illustrated the front elevations of buildings in some detail and also indicated their use.[44] Moreover, although unusual, it was not unknown for a pictorial map to convey information about occupations at this period.[45] Some form of pictorial representation was already old by Watson's day and he may well have seen and used maps of antique design in the course of his work.[46] But this is speculation. Watson was in any case probably correct in thinking that 'an illustrated plan' would command greater commercial success than a more orthodox production.

It is easier to determine the accuracy of Watson's architectural detail than to verify some of the other information contained on his plan. Inspection on the ground suggests that he is a reliable guide to the character and appearance of buildings and that his plan

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[38] 'A Plan of the Town of Market Weighton in the East Riding of Yorkshire Surveyed and Published by William Watson, 65 Northgate, Market Weighton, May 1st 1848'. Examples may be seen at the B.I.H.R. (PR, M/W 37) and the E.R.R.O. (DDEV 70/13). A coloured version hangs in the Londesborough Arms Hotel, Market Weighton, and forms the basis of E.R.R.O. DPX 44. I am grateful to the National Monuments Record and the Hull Brewery Co. Ltd. for providing me with a photograph of the plan in the Londesborough Arms.

[39] William Monkhouse, a well-known York lithographer, worked in the 1840's from premises in Lendal which have since disappeared. References to him occur in Harold Whitaker, 'A Descriptive List of the Printed Maps of Yorkshire and its Ridings, 1577–1900', *Y.A.S.R.S.* lxxxvi (1933), pp. 170, 246.

[40] Boast appears on the plan as a 'Printer etc' in High Street.

[41] *Inf. ex.* H. E. C. Stapleton. The general style of these resembles the drawings on the plans of 1848 and 1855.

[42] A nice touch on the 1844 plan of Pocklington is the representation close to Watson's house on West Green, of a sundial on a pedestal.

[43] The claim appears on the 1855 plan of Pocklington.

[44] The nearest approach to Watson appears to be John Tallis's *London Street Views,* which was published between 1838 and 1840 (John Tallis's *London Street Views, 1838–1840*, London Topographical Society Publication 110, 1969). A later edition of the *Street Views* appeared in 1847. In his introduction to Tallis, Peter Jackson remarks (p. 10) 'that to combine a directory with a view showing every building listed in it was a unique idea and, surprisingly, remains so, for there were and have been no imitators'. Though Watson's work differs from Tallis's in important respects (e.g. there is no evidence to suggest that Watson used his plans as an advertising medium), the resemblance is too close to be ignored.

[45] I am grateful to Dr. Peter Eden of the University of Leicester for comments on this point.

[46] On the subject of early maps generally see Edward Lynam, *The Mapmaker's Art*, London, 1953, esp. chapters 1 and 2.

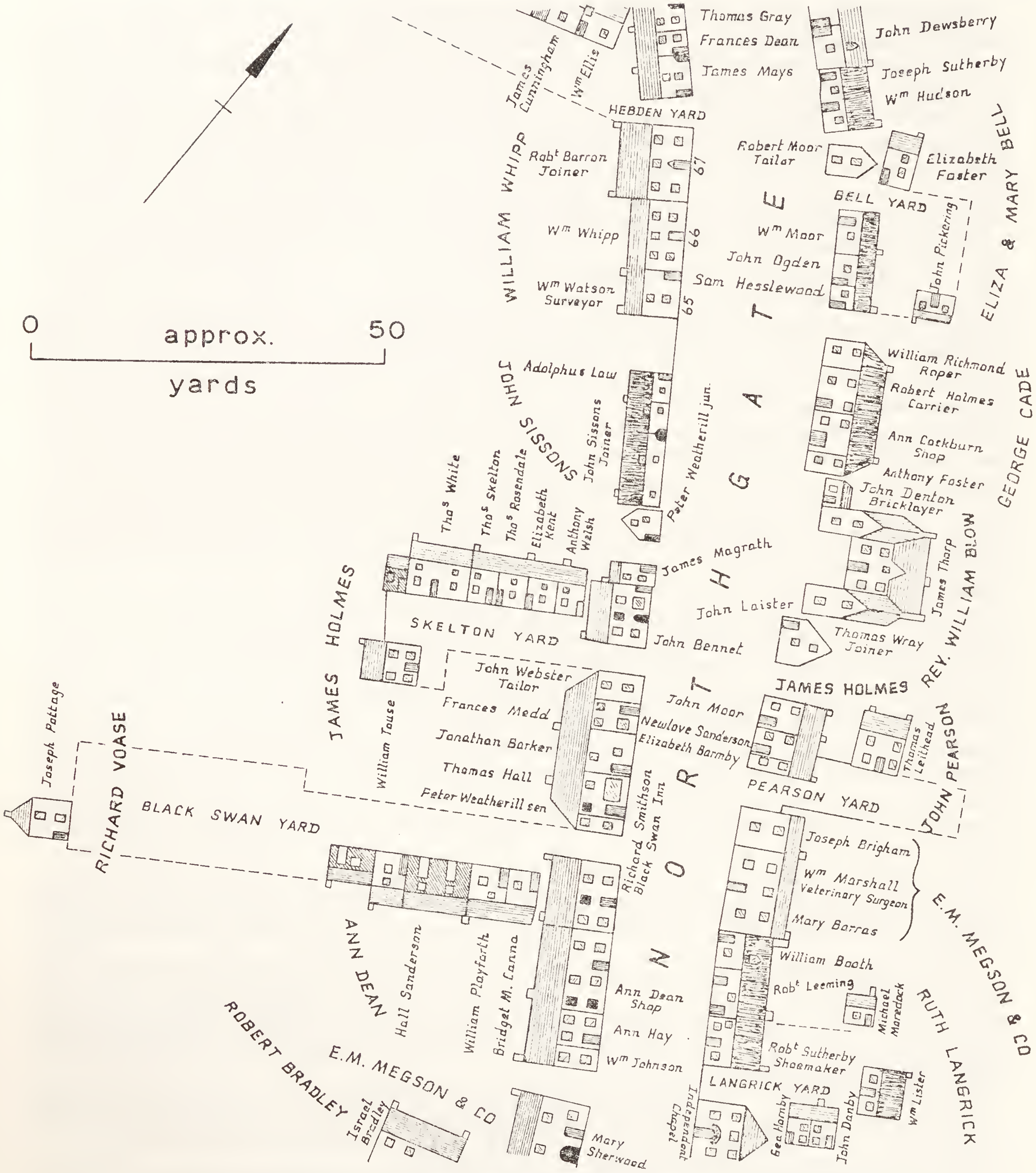

Fig. 1. Northgate, Market Weighton, in 1848, redrawn from a plan in the Londesborough Arms Hotel by William Watson.

might be used with confidence in any analysis of building styles at this period. Nor is there any reason to doubt that the names of property owners were correctly recorded and plotted.[47] The plan reveals most effectively the fragmented pattern of landownership which existed in Market Weighton.

In the case of occupations, however, Watson provides a less comprehensive view. As Fig. 1 shows, his information is incomplete, many heads of households being named but no occupation assigned to them. The omissions are not unimportant. The unpublished

[47] Directory entries and *The Register of Persons Entitled to Vote . . .* [*in the*] *. . . East Riding of the County of York*, 1855–56 (1855), p. 239, provide means of checking a number of Watson's statements.

schedules of the 1851 Census of Population indicate the presence of numerous agricultural labourers within the town.[48] Farmers are included in Watson's 'Trades etc' which provide his terms of reference, though labourers are not. In 1851 Joseph Pottage and his neighbour John Hall Sanderson carried on the trades of cattle dealer and shoemaker respectively. Peter Weatherill, senior, was a blacksmith, Thomas Hall a grocer. All of these individuals are named on the plan, though their occupation is omitted (Fig. 1). Shopkeepers, smiths, shoemakers and cattle dealers appear elsewhere, and it is difficult to believe that Watson would have omitted occupations in some cases and included them in others except as a matter of policy. A note on the 1855 plan of Pocklington, which refers also to the Market Weighton plan, explains that the author had indicated 'the names and trades of all the Householders'. Unfortunately, no definitive list of householders appears to have survived for Market Weighton at this period, though many of the names to which Watson attaches an occupation in 1848 can be traced in parochial assessments to the poor rate earlier in the century.[49] When a householder carried on more than one trade, Watson usually refers to the fact. It would appear from the census, however, that some of the finer points of detail elicited by the enumerators in 1851 were not recorded in 1848.[50] Moreover, once in a while Watson admits to his map a description that finds no counterpart in the census. Robert Gardham, who is described in 1851 as a farmer and carrier, appears in 1848 as a carrier and astrologer, a combination of occupations which one suspects must have captured Watson's imagination. In spite of these shortcomings, it must be emphasised that a comparison of Watson's descriptions with those available in contemporary directories and other sources indicates that, so far as it goes, the information on his plan is generally reliable.[51] On the other hand, while Watson successfully portrays the variety of trades – milling, innkeeping, retail and craft activities – that one would normally associate with a small Yorkshire market town at this period, he evidently does not reveal the full occupational structure of Market Weighton in 1848. For that one must look elsewhere.

Watson's last work was probably 'The Illustrated Plan of the Town of Pocklington' which he published in 1855, two years before his death.[52] Once again the services of William Monkhouse were sought as lithographer and 'windows, doors, chimneys, etc. in the Front Elevation of all the Houses' were again depicted. The names and trades of householders were appended, though on this occasion no attempt was made to identify the owners of property (Fig. 2). The result is both pleasing and informative. The omission of landowners' names allowed Watson to space his lettering in a more elegant manner than had been possible in 1848 and this fact, together with draughtsmanship and reproduction of a very high order, makes this perhaps the finest of all his maps and plans.

Many of the comments made in relation to the plan of Market Weighton apply also to this and need not be repeated. Some of its merits and limitations may best be illustrated perhaps by the following table.

GEORGE STREET, POCKLINGTON

1851 Census[53]		Watson 1855	
J. Gibson	brass and iron founder	J. Gibson	foundry
F. Todd	journeyman miller	R. Brown	—

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[48] P.R.O. H.O. 107/2357 (1851).

[49] PR M/W 20 (1820–1) B.I.H.R. throws some light on this question. I am indebted to Dr. David Rubinstein for assistance here.

[50] John Vause, who kept the Barleycorn Inn, appears on the map as an innkeeper, whereas the 1851 Census describes him as innkeeper and butcher. Thomas Thorp, a cooper according to Watson, was a farmer as well in 1851. Differences such as these may of course be explained in some cases by a genuine change in circumstances during the intervening period.

[51] Directories for 1846 and 1848 have been examined. Book GR, p. 124, Registry of Deeds, Beverley, provides some comparative information for 1850.

[52] Copies of the plan are available in Hull Reference Library and in the E.R.R.O., DDPY 19/4. A framed example hangs in the museum at Burnby Hall, Pocklington. Others are known to exist in private hands. I am much indebted to the Revd. Canon Graham Christie for his assistance in tracing copies of this plan in Pocklington. Buildings are shown in black and white, roads in yellow, grass in green. Scale of chains, yards and feet, 21 yards=1 inch.

[53] P.R.O. HO 107/2357, Sup. Reg. Dist. Pocklington, District 8a (1851). Great George Street.

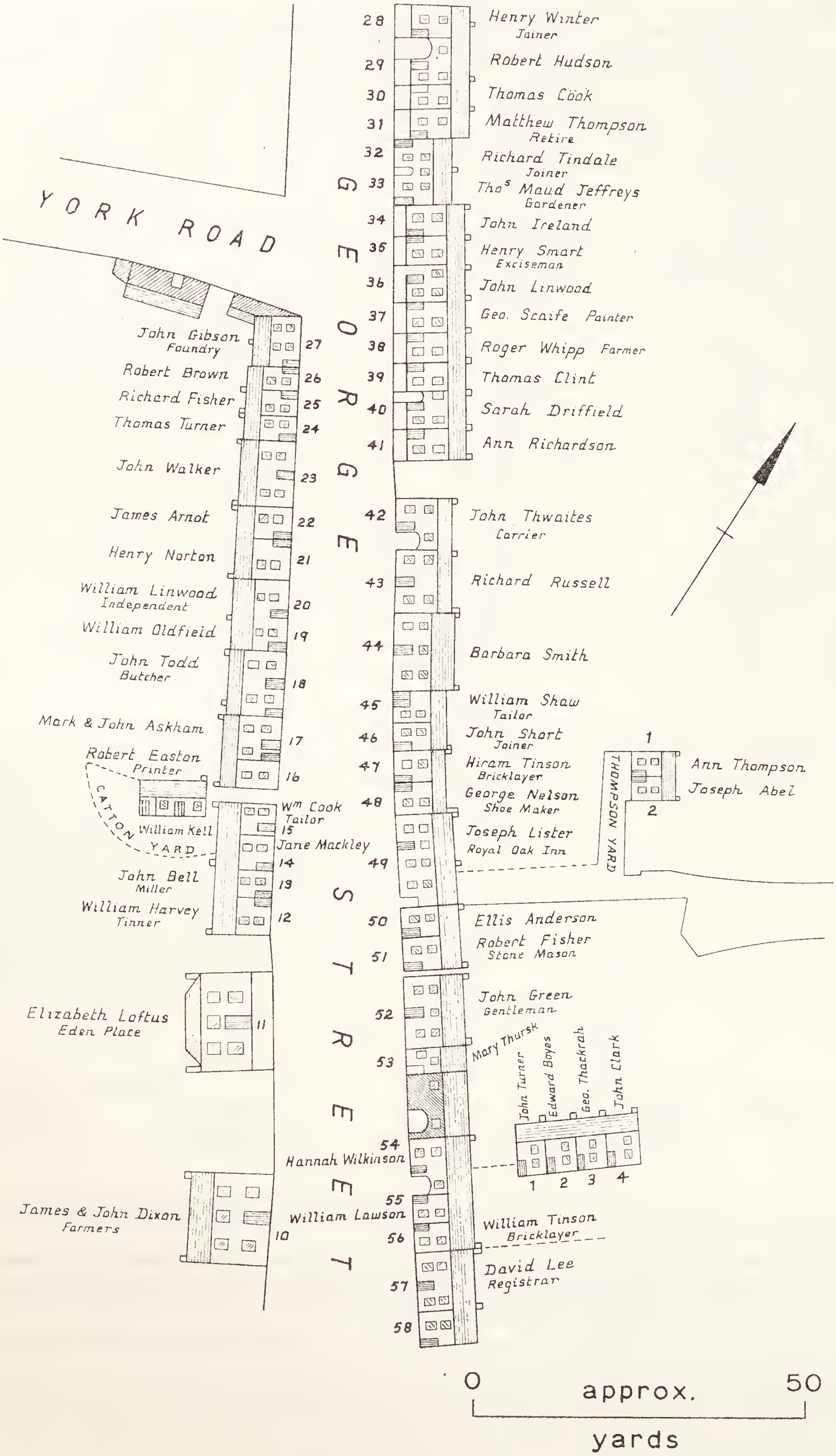

Fig. 2. Part of Watson's plan of Pocklington (1855), based on E.R.R.O., DDPY 19/4.

J. Turner	pauper	R. Fisher	—
T. Turner	agricultural labourer	T. Turner	—
J. Walker	proprietor of houses	J. Walker	—
J. Peacock	agricultural labourer	J. Arnot	—
H. Norton	agricultural labourer	H. Norton	—
W. Linwood	corn dealer	W. Linwood	independent
W. Oldfield	agricultural labourer (pauper)	W. Oldfield	—
J. Todd	butcher	J. Todd	butcher
E. Askham	widow	M. & J. Askham	—
J. Easton	printer	R. Easton	printer
W. Kell	agricultural labourer	W. Kell	—
W. Cook	tailor	W. Cook	tailor
J. Mackley	schoolmistress	J. Mackley	—

This is not the place for a study of Victorian Pocklington. It will be apparent, however, that Watson's plans of 1844 and 1855, together with Easton's *Directory* and the census schedules, provide a more than adequate basis for such a study.

The commercial success of Watson's plans remains in doubt, though it is perhaps significant that his estate was valued at less than £100 in 1857.[54] His work appears to have attracted little attention during his lifetime and, like Watson himself, to have been largely forgotten after his death.[55] That event too attracted little or no public comment, to judge from the absence of any obituary notice or contemporary appreciation. Watson died, unmarried, in Seaton Ross on 4 December 1857 and was buried there close to other members of his family. He deserves to be remembered. Not the least of Watson's claims on our attention is that his maps and plans provide a unique glimpse of a part of the Yorkshire scene that has now largely disappeared for ever.

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[54] Watson's will was proved in December 1857 at York (B.I.H.R.). He left everything to his brother James, who was still farming at Seaton Ross. James Watson, who had been born in 1794, lived until 1890 and was the longest-lived of John and Sarah Watson's family. He survived George Watson (b. 1802), the youngest of William's brothers, by fourteen years.

[55] A. G. Cox and D. Stather, *A History of the Parish of Market Weighton and District*, Market Weighton, 1957, refer to Watson's plan of 1848, but the only general account of Watson's work and interests known to the writer is in Stapleton, *op. cit.*, p. 34. Since this paper was written, David Neave has commented on Watson's association with Pocklington (*Pocklington 1660-1914*, Beverley, 1971).

THE LEEDS JEWISH TAILORS' STRIKES OF 1885 AND 1888

By Colin Holmes

I

Between 1882–1905 British society saw a significant increase in its Jewish population as a result of immigration from the Russian Empire. Accurate figures regarding the size of the influx are unobtainable,[1] but, taking a wider chronological view, it has been estimated that approximately 120,000 Jewish immigrants settled in Britain between 1870 and 1914,[2] the majority of whom arrived after 1882. In relation to the size of the settled Jewish community, estimated at 65,000 in 1880,[3] and seen at its richest and most powerful in 'the Cousinhood,' this was a major numerical increase.[4]

The newcomers followed a familiar immigration pattern and settled principally in urban centres close to existing communities. Three areas, East London, traditionally an immigration reservoir, Leeds and Manchester saw the largest settlements. The build-up in Leeds was extremely pronounced. A community had been established here by the middle of the nineteenth century and by 1877 numbered 500 families.[5] It was a settlement of this size which was swelled by the East European influx, to an extent which led *The Lancet* to comment:

> During the last twenty years there has been a steady influx of Polish Russian Jews. The greater part come from the province of Kovno, and on starting are often acquainted with but one word of English and that is 'Leeds'. They generally land at Hull, proceed direct to Leeds and know nothing of England and English institutions save what they have been able to learn in the latter town. It seems evident that on the whole they readily earned their living in Leeds. . . . It is calculated that there are from 1,200 to 1,400 Jews working at tailoring in Leeds and this mostly for sweaters. With them are about 500 Jewesses.[6]

This immigration, together with natural increase, resulted in a total Jewish population in Leeds of 10,000 in 1897 and 12,000 by 1900. During these immigration years 'the local ghetto (in the Leylands area of the city) took living and active form'[7] Today, it is a compound of new factory blocks and crumbling back-to-back houses, from which there has been a Jewish migration, often along the Chapeltown Road into Moortown and Alwoodley Lane. In the 1880's, however, it was to the Leylands that the immigrants came, and it was here, too, according to Burgess, that the Jewish community was subjected to abuse or even physical violence, while it was the same ghetto area that the immigrants transformed into 'a healthy, moral, peaceful and law abiding world.[8]

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[1] On the difficulties involved in any calculation, see J. A. Garrard, *The English and Immigration, 1880–1910* (1971), Appendix 1, pp. 213–16. See also Bernard Gainer, *The Alien Invasion* (1972), pp. 6–14.

[2] L. Gartner, *The Jewish Immigrant in England, 1870–1914* (1960), pp. 30, 274.

[3] V. D. Lipman, *Social History of the Jews in England, 1850–1950* (1954), p. 65.

[4] On the powerful late-nineteenth-century Anglo-Jewish families see C. Bermant, *The Cousinhood* (1971).

[5] *Jewish Chronicle*, 9 March 1877, p. 7. Students of Jewish immigration and the Leeds Jewish community might benefit from Dr. J. Buckman's Strathclyde Ph.D. thesis, *The Economic and Social History of Alien Immigration to Leeds, 1880–1914*. This thesis has been on restricted access since 1968 and Dr. Buckman has refused to let me read it. I understand that in my case such restriction is permanent and irrevocable.

[6] Report of the Lancet Special Sanitary Commission on the Sweating System in Leeds, 9 and 16 June 1888 in *The Lancet*, vol. 1, London 1888, p. 1146. John Burnett, the Labour correspondent of the Board of Trade noted in his 1888 report on Leeds that 'recently the influx (of Jewish immigrants) has been heavy and continuous and the immigrants continue to arrive every day'. *Report by the Labour Correspondent to the Board of Trade on the Sweating System in Leeds.* British Parliamentary Papers (hereafter B.P.P.), 1888, LXXXVI, p. 3. The main developing concentrations of the Jewish proletarian immigrants are noted in L. Soloweitschik, *Un prolétariat méconnu. Etude sur la situation sociale et économique des ouvriers juifs* (Brussels, 1898), p. 48.

[7] E. E. Burgess, 'The Soul of the Leeds Ghetto', *Yorkshire Evening News*, 19 January 1925.

As *The Lancet* commission and other contemporary surveys discovered, the immigrants concentrated in the ready-made tailoring trade particularly at the coat-making end.[9] Ready-made clothing was rarely heard of before the middle of the nineteenth century. Until then the individual craft or bespoke tailor was still the principal producer of clothing, turning out garments which were made to measure for each individual customer, and completing a large number of garments himself. Those unable to afford bespoke goods either wore 'cast-offs' or slop clothing. Even so, by the mid-nineteenth century some craft tailors were beginning to sub-divide their work by using unskilled female labour on the more menial tasks[10] and by this time John Barran, who became a leading figure in the Leeds ready made trade, was already developing his interests in ready mades.

The general factors contributing to the rise of the new industry are not difficult to isolate. The introduction of machines and the rise in the living standards of many of the population after 1850 provided the necessary supply and demand pressures. More specifically, the reasons for the role assumed by Leeds were more complex. None of the important locational advantages was unique to Leeds: other towns were close to textile mills, and could rely upon an adequate supply of labour. The crucial factor in the Leeds situation, it would seem, which enabled its ready made industry to grow 'wonderfully', was that the expansion of the clothing industry coincided with the fortuitous decline of the flax trades, which directed a movement of female labour to the ready made clothing sector. This reservoir of unemployed yet disciplined factory women was central to developments in the city.[11]

The ready made industry in Leeds became characterised by its factory production and the increasing size of the factories, its minute subdivision of labour, its preponderance of female workers and an intense competition. Although the factory was 'the main show', the number of workshops, the function of which was to supplement factory production, also increased. It was in this connection that Jewish immigrant labour contributed towards sustaining the industry. The workshops were, in fact, largely concentrated in the hands of Jewish owners,[12] who were the middlemen between the factory owners and the 3–4,000 outworkers,[13] 1,400–2,000 of whom were Jewish workmen.[14]

The structure of the industry in Leeds was different from that which prevailed in London. The London workshop 'sweater' with 8–10 machines was regarded as a large employer, but in Leeds a workshop master with 10 or 12 machines was operating only on a small scale. The average number of machines in Leeds was between 20 and 30. The subdivision of labour was also carried on to a greater extent than in London. Finally, the method of subcontracting differed between the two cities. In London the middleman had to collect between 20 or 30 separate jobs and have them completed by the next day, whereas in Leeds they were cut into large bundles before collection and time could be taken over them. As a result of these advantages the workshops in Leeds could produce high quality, cheap goods and, working in larger quantities, were able to pay higher wages.[15]

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[8] *Ibid.*, 20 January 1925. The general history of the Jewish community in Leeds is told in outline in E. Krausz, *Leeds Jewry* (Cambridge, 1964).

[9] *Report on the volume and effects of the recent immigration from Eastern Europe into the United Kingdom*, B.P.P. 1894, LXVIII, p. 164, 'The wholesale clothing trade nearly monopolises the labour of this class of artisan'. See also the *Royal Commission on Alien Immigration*, B.P.P. 1903, IX, vol. II, p. 737 (henceforth cited as *R.C.* 1903).

[10] See B. Drake, 'The West End Tailoring Trade', in S. Webb and A. Freeman (eds.), *Seasonal Trades* (1912), p. 71.

[11] J. Buckman, 'Later Phases of Industrialization to 1918', in M. W. Beresford and G. R. J. Jones (eds.) *Leeds and its Region* (Leeds, 1967), p. 158. Rimmer has noted that numbers employed in the textile trades fell after 1851 and by 1891 the textile industry had ceased to be the main employer of labour. This development 'was one striking change in the town's occupation structure'. W. G. Rimmer, 'Occupations in Leeds, 1841–1851', *Thoresby Society Miscellany*, vol. xiv, 1956–8, p. 166. Anyone interested in Victorian Leeds should, of course, consult A. Briggs, *Victorian Cities* (1963), pp. 137–83.

[12] Clara Collet, 'Women's Work in Leeds', *Economic Journal*, I, 1891, p. 468.

[13] June Hendrick, *The Tailoresses in the Ready Made Clothing Industry in Leeds, 1889–1899; A Study in Labour Failure*. M.A. Dissertation, University of Warwick, 1970, p. 17.

[14] *Leeds Mercury*, 16 June 1888, *Yorkshire Factory Times*, 29 August 1890.

The degree to which factories or workshops dominated was related chiefly to the nature of the labour force and the industrial character of the region. In London the fact that a great deal of male employment was of a casual nature meant that there was a large supply of cheap female labour desperate for work at any price to supplement their husbands' earnings. This led to the proliferation of homeworking and the spread of small workshops, which in general could only compete with factory-produced goods by grinding the workers for long hours at low wages. In Leeds the preponderance of skilled employment for men and alternative avenues of employment for women in the relatively declining although still important textile trades gave employers little opportunity to rely on the exploitation of cheap labour other than a certain amount of female and immigrant labour in their attempts to capture the market. Instead, attention was turned to the efficiency of the factory system.[16]

Despite the efforts of larger factories to cut down the amount of subcontracted work, workshops were able to hold their own into the 1890's and provided a useful adjunct to factory production. Masters emphasised the role of the workshop in assisting rather than competing with the factories and a realisation of this, together with the degree of skill which prevailed in the workshops, which had been obtained by 'concentrating in one branch of the trade, minute attention to detail, and an extreme degree of application',[17] guaranteed the existence of workshops. Homework continued alongside factory and workshop production. Both factories and the larger workshops employed home workers who could be found in the trade as late as 1914. In Leeds, however, homework was less important than in London or Bristol.[18]

Overall, 'the influx of Jews to Leeds in the 1880's helped to supplement at low cost the output of the factories', and the immigrants attracted to Leeds by a clothing industry which was laready expanding and which offered employment,' should be properly regarded as a 'contributory rather than a crucial factor in the growth of the industry'.[19]

II

It was in this Leeds tailoring trade that the first significant strike by Jewish immigrant workers took place. It occurred in June 1885 '. . . when the workers (in the tailoring trade) met in a local synagogue to demand the reduction of one hour from the usual 13–14-hour day, and won it by a one week stoppage of work'.[20] At the meeting, which involved pressers, under-pressers and tailors it was demanded that employers should be made to concede the following hours:

Tailors : 7 am to 8 pm
Pressers : 8 am to 8 pm
Under Pressers : 7 am to 8 pm

For the majority of those present this would have meant an hour less on the day. Isaac Myers, who presided at the meeting

> then spoke of the system to which they were subjected . . . stating that middlemen were reaping large profits weekly from their toil, as was shown by their mode of living, class of residence etc.[21]

It was decided to abide by the demand for the reduction in hours, which had been incorporated in a circular which was sent to the workshop employers, while it was also resolved not to return to work until their demands had been met. Soon 5–600 Jewish tailors were out on strike.[22]

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[15] Hendrick, *op. cit.*, pp. 18–19.

[16] *Ibid.*, pp. 21–2.

[17] R. H. Tawney, *The Establishment of Minimum Rates in the Clothing Industry under the Trades Board Act of 1909* (1915), p. 16.

[18] Hendrick, *op. cit.*, p. 20.

[19] *Ibid.*, p. 26. See also House of Lords *Select Committee on the Sweating System* (Fourth Report), B.P.P. 1889, XIV-I, pp. 358–9.

[20] Gartner, *op. cit.*, p. 118.

[21] For further details see *Leeds Times*, 4 May 1885.

The strikers did not have to wait long for a decision. The workshop owners were prepared to grant the concession but warned the workers that they would necessarily take a reduction in pay for the 'lost' hour.[23] However, all except 13 of the 62 middlemen in the trade soon granted the workers' terms[24] and by 14 May 1885 James Sweeney[25] could proclaim that the strike had been a success. The hourly concession, without loss of earnings, was granted on condition that the strikers returned to work.[26]

The strike, as one of its leaders commented long afterwards was 'a protest against hard times; a sort of cry of despair', with victory gained 'after a fortnight's hardship' in the face of employer opposition and attempts to introduce scab labour.[27]

Only 3 years later a further confrontation occurred, in May 1888, when

> . . . a largely attended meeting of men engaged in the Jewish tailoring trade in Leeds was held in the Gower Street Board School. It was unanimously decided to strike against the 'long and shameful hours of labour', to demand that hours should be 58 per week, and that any overtime should be paid at the rate of 'time and a half' and to enforce 'society shops' upon the employers. About 1,200 men (were) affected by the decision.[28]

The timing on the workers' part was superb. They struck at the busiest time of the year and threatened the delivery of Whitsuntide orders.[29]

The basic factors behind the strike are not difficult to isolate. It is apparent that there was a need felt for a reduction of hours. It was asserted that 62 hours constituted the working week at many workshops; at others 72 hours were worked and there were instances of 73 hours.[30] The strikers believed that this degree of exploitation, resulting in hours in excess of those worked by English labour in the trade would ensure sympathetic support for their claim,[31] which would still have left their hours longer than those worked by most Englishmen.[32]

Since the strikers also demanded that any work over 58 hours should be paid for at time-and-a-half rates, they were, in effect, also placing before the employers the prospect of pay rises, although in general it was made clear that the strikers did not envisage any increase in rates paid during the normal working hours.[33]

Before dealing with the progress of the strike it ought to be emphasised that its timing was important not merely because it occurred at a busy time of the year, but also since it was calculated to attract the attention of the Government Commissioners who had begun to investigate the sweating system.[34]

How did the strike develop? As an occasion for coming out the men used the employers' refusal to discuss any issues until the men produced a written statement of their claims.[35] Once the strike started the extent of the difference between the two sides was clearly apparent. On behalf of the Jewish Master Tailors' Society, Mr. W. L. Smith, the Secretary, commented on the men's position:

> We will put as concise as possible the supposed grievances of the men. They first complain of the

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[22] *Yorkshire Post*, 9 May 1885.

[23] *Leeds Evening Express*, 7 May 1885.

[24] *Yorkshire Post*, 9 May 1885.

[25] Sweeney was a member of the Socialist League and took part in all strikes of unskilled workers in Leeds between 1880–90. He was Secretary of the Jewish Tailors' Trade Society in 1888 and later became a member of the Leeds Trades Council.

[26] *Yorkshire Post*, 14 May 1885.

[27] Joseph Finn, quoted in Gartner, *op. cit.*, p. 118.

[28] *Leeds Mercury*, 7 May 1888.

[29] *Leeds Daily News*, 8 May 1888.

[30] *Leeds Mercury*, 8 May 1888.

[31] *Yorkshire Post*, 8 May 1888.

[32] *Ibid.*

[33] *Leeds Mercury*, 8 May 1888.

[34] *Yorkshire Post*, 10 May 1888, *Leeds Mercury*, 10 May 1888. The strikers were successful in drawing attention to their situation. John Burnett, the Labour Correspondent of the Board of Trade, went to Leeds, where Beatrice Potter was already informally investigating conditions. Burnett reported his findings to the Government. See above n. 6.

[35] *Leeds Mercury*, 8 May 1888.

> long and shameful hours of labour and also demand that their working hours should be fifty-eight per week, instead of from 7 am to 8 pm one branch and from eight am to eight pm (off which must be deducted 1½ and 1¾ hours for meals respectively). Now compare this with the money paid for English workpeople, who work, we admit, slightly less hours but do not command the same salary, our work people not making less on an average than 6*s* per day, which we consider not at all bad wages. Then again, comes their demand for 'society shops'. Do the public know the meaning of their so-called 'society shops'? It means simply this that if the masters accepted their conditions any journeyman from any other town must, before he can gain a situation in Leeds, pay a certain sum to their society, and then, having become a member, he would be taken to a Jewish master tailor and employment demanded for him and should the employer state that he had a full complement of hands he would be *compelled* to dismiss one of the many females (some of whom have been brought up in the trade), and it would also be the thin end of the wedge for the gradual extermination of female labour in the trade, not to mention the injustice that would accrue to scores of families in the town, both English and Jew, whose sole sustenance is derived from the working of their daughters.[36]

This last accusation was dismissed by Sweeney as 'a trumped-up lie' and even failed to convince women workers.[37] Remarks about earnings of 6*s* per day were also rejected by the strikers.[38]

By 9 May the conflict had sharpened and the situation deteriorated and it was estimated that approximately 1,400 men and several thousand girls were out, although a number of English women stayed at work, apparently satisfied with their situation.[39] The men, however, reiterated their original claims in a statement to the employers, to which the latter gave a short reply:

> We beg to acknowledge the receipt of your letter of today, and in reply to state that, having given the matter full consideration, we have come to the conclusion that we cannot accede to your demands. The employers are quite willing to allow you to return to work on the old terms.[40]

And so the dispute continued, with neither side conceding ground, and with the workers extending the conflict by taking their grievances and placing them before the wholesale houses,[41] from which the workshop employers took their orders. In face of continuing pressure, in which Tom Maguire became involved,[42] the employers made an attempt to break the deadlock. After a meeting on 13 May, a letter was sent to the workmen's society which stated

> At a meeting of the master tailors held here tonight it was unanimously resolved that we will give you the 58 hours, as demanded, on condition that you be paid by the hour at the present rate of wages.[43]

The offer was not taken up. However, changes in the situation were discernible by 16 May. Some men had returned to work on the old terms and employers had begun to engage workers from Manchester and London. At the same time, the strikers appealed to the Leeds Trade Council for a demonstration, an appeal to the public for funds was being contemplated, and a representative of the Jewish International Club in London arrived in Leeds to help in organising the strikers.[44] On 18 May the appeal for strike funds appeared in the press.[45] Both sides were clearly attempting to maintain their positions. In addition to these developments, workers resorted to intimidation to prevent the strike being broken,[46] while the Leeds Trade Council gave them moral support and a variety show was organised to provide additional strike money.[47] At the same time, to strengthen their position, the employers began to send material to be worked up in London and placed pressure upon local tradesmen to withhold credit from the strikers.[48]

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[36] *Ibid.*

[37] *Ibid.*

[38] *Yorkshire Post*, 8 May 1888 and *Leeds Daily News*, 9 May 1888.

[39] *Leeds Daily News*, 9 May 1888.

[40] *Yorkshire Post*, 10 May 1888.

[41] *Ibid.*, 11 and 12 May 1888.

[42] Tom Maguire: a photographer's assistant and poet. One of the leading figures in the Leeds Socialist League. Very prominent in organising the unskilled in Leeds, 1889–90. See E. P. Thompson, 'Homage to Tom Maguire' in *Essays in Labour History*, eds. A. Briggs and J. Saville (1967), pp. 276–316.

[43] *Yorkshire Post*, 14 May 1888.

[44] *Ibid.*, 17 May 1888.

[45] *Ibid.*, 18 May 1888.

[46] *Ibid.* and *Ibid.*, 24 May 1888. There had been a previous case of intimidation by an employer. *Leeds Daily News*, 9 May 1888.

[47] *Yorkshire Post*, 18 May 1888. The fact that the Trades Council was only prepared to grant moral support was an interesting illustration of the attitude towards unskilled labour at this time. Such an attitude, for example, contrasted with the financial help offered towards an A.S.E. strike in 1897. For comments on the élitist attitude in the Trades Council see an unpublished paper by Robert Turner, 'The Development of the Leeds Trade Council, 1889–1914', pp. 2–8, 14.

The first major concession in this situation, the first 'crack', appeared by 20 May. A greater number of workers began to return to work and, perhaps realising that the present struggle was over, a letter was sent by the Executive Committee of the Leeds and District Trades Council to Messrs. John Barran & Co. and other prominent wholesale clothiers, asking them to use their influence in providing workshops for Jewish tailors who were engaged on working up their material,[49] presumably on the assumption that direct employment by the wholesale houses would eliminate the wage cutting and exploitation which surrounded the workshops of the middlemen, who were themselves engaged in fierce competition for work from the wholesalers and many of whom, accordingly, maintained their profits by grinding their workers. By 24 May the workers' resistance was crumbling and the *Leeds Mercury* could proclaim that 'the strike is virtually at an end, only a few of the men being out, and these are chiefly the leaders, whom the employers refuse to engage again'.[50]

If 1885 had been probably the first important and successful Jewish workers' strike during the immigration years, 1888 was clearly an exercise in failure which closely followed it. The strikers had little or no funds to support their action and could hardly be expected to sustain their struggle for any length of time. While other workers were sympathetic with moral support, sufficient funds were not forthcoming for the strike to continue.[51] With the collapse of the strike the first major phase of Jewish trade unionism in Leeds, which had begun about 1880 and accelerated in the marked depression which followed the revival of trade between 1881–1883, was over. When James Sweeney gave evidence before the Select Committee on Sweating on 30 May 1889, the organisation he had helped to build, the Jewish Tailors' Trade Society, had collapsed.[52]

III

Are there, it might be asked, any general conclusions which can be drawn from the events which have just been described, in relation to the problem of alien Jewish immigration in the years 1882–1905? It might be noted, first of all, that many contemporary commentators stressed the capitalist virtues of the immigrant Jews. Government enquiries, for instance, found them possessing the values worshipped at the altar of industrial capitalism – stereotyping them as 'temperate', 'orderly', 'industrious' and 'steady'.[53] Others expressed the situation differently. The Leeds slipper makers, for example, who had to compete with Jewish workers, talked about 'the unfair competition of the Jew',[54] by which they referred to Jewish workers producing cheaper goods through working longer hours. Such activity symbolised the virtue of competition on which the economy had supposedly grown to greatness, but it is hardly surprising that workers affected by this kind of competition saw it differently. More sophisticated commentators, such as Beatrice Potter when she investigated working conditions in East End, took up the same theme. The immigrant Jewish worker was characterised as being devoid of any concept of minimum or maximum living standards while displaying all the qualities of 'the economic man', engaged in a ruthless pursuit of individual profit without any concern for the public good.[55] J. A. Hobson could comment in similar vein:

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[48] *Leeds Mercury*, 19 May 1888. Lewis Lyons refers to work being sent to London, House of Lords *Select Committee on the Sweating System* (First Report), B.P.P. 1888, XX, pp. 357, 362.

[49] *Yorkshire Post*, 21 May 1888. Barron's benefited particularly from Jewish labour. See the compliment paid by Rowland Barron M.P. in a Leeds by-election in July 1902, quoted in M. J. Landa, 'The Economic Aspects of Alien Labour', in *The Economic Review*, January 1906, p. 46.

[50] *Leeds Mercury*, 24 May 1888. See also *Commonweal*, 26 May 1888. A similar type of refusal to hire agitators occurred after the 1885 strike. Joseph Finn (Finnie) 'left England in January 1886 for the U.S. as after the strike of 1885 the employers declared a boycott against me'; J. Finn in *Die Tsukunft* 1, 45, 2 May 1885, quoted in Gartner, *op. cit.*, p. 118.

[51] *Commonweal*, 26 May 1888. James Sweeney also emphasised the financial aspect of the failure. See *Select Committee on . . . Sweating* . . . B.P.P. 1889, XIV–I, p. 364.

[52] *Ibid.* p. 352.

[53] House of Commons *Select Committee on Emigration and Immigration* (*Foreigners*), B.P.P., 1889, X, p. 52. Evidence of Mr. William Clayton, Chairman of the Board of Guardians at Leeds.

[54] R. H. Sherard, *The White Slaves of England* (1904), p. 112.

> Just because he is willing to work so hard for so little pay, willing to undertake any kind of work out of which he can make a living, because he can surpass in skill, industry and adaptability the native landowner, the foreign Jew is such a terrible competitor.[56]

By contrast, the immigrants were considered incapable of forming themselves into Trade Unions. Beatrice Potter, for example, regarded the Jewish newcomers as a race of producers with an indefinitely low standard of life and apparently without the capacity for combination.[57] In brief, there was a tendency to regard all Jewish immigrants as potential capitalists, with no concern or capacity for trade-union attitudes.

The Leeds experience questions these basic assumptions. Unionism among Jewish workers in Leeds had begun in the early 1880's, and the 1888 strike had been led by the Jewish Tailors' Trade Society, by which time the body had 3,000 members. After the defeat of the strike, membership fell from 1,000 to 2 and the Union folded. A year later, however, during the Tailoresses' strike,[58] interest in Unionism revived and by May 1890 it was reported that the Jewish Tailors' Union, which owed a great deal to Socialist involvement, had 900 members. In common with most Unions in the textile trade, the Jewish Tailors' Union did not include all men in the workshops:[59] the machinists and pressers remained separate from the tailors, and it was not until 1893 that a more stable union, the Amalgamated Jewish Tailors', Machinists' and Pressers' Union emerged, which united all three sections. A small Pressers' union still continued its existence, but the larger Union slowly gained ground, increasing its membership from 100 in 1893 to 1,200 in 1900, and improving working conditions during these years.

In London – a great deal of evidence on Jewish immigration is drawn from London sources – attempts to form Unions among Jewish tailors and other workers were generally unsuccessful, and it was this experience which led many organisers and commentators to believe that Jewish workers were incapable of trade unionism. The activity of Jewish workers in Leeds shows that this was not the case, and the explanation for their success must be sought in the structure of the industry:

> The Jewish labour force was constantly shifting, for new immigrants were always arriving while others were leaving for America . . . In London, workshops were constantly opening and closing; slack seasons were periods of demoralisation . . . skilled workmen moved in and out of entrepreneurship . . . where there were larger and more stable producers, as in Leeds, Jewish Trade Unions also became efficient instruments.[60]

These developments associated with Jewish trade unions were of a broader significance, to the extent that they were symptoms of an incipient acculturation of Jewish workers and the development of a working-class consciousness among the immigrants.[61] As early as 1888 James Sweeney could comment that:—

> The time had passed when it could be said Jews would work 18 hours per day; the Jews wanted to work the same hours as the Christian workman.[62]

By 1903 this tendency was even more pronounced, so that Sam Freedman, Secretary to the Leeds Jewish Tailors', Machinists' and Pressers' Trade Union, could tell the Royal Commission on Alien Immigration:

> The number of aliens working in the trade (and when I say 'aliens', they are Jews) is from 1,600 to

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[55] B. Potter, 'The Jewish Community', in C. Booth (ed.), *Labour and Life of the People* (1889), I, pp. 586, 589, and S. and B. Webb, *Industrial Democracy* (1902), pp. 697–8.

[56] J. A. Hobson, *Problems of Poverty* (1891), p. 60.

[57] B. Potter, 'East London Labour', *Nineteenth Century*, xxiv (1888), p. 177.

[58] For details see Hendrick, *op. cit.*, pp. 65–93.

[59] See R. Rocker, *The London Years* (1956), p. 167.

[60] Gartner, *op. cit.*, p. 119. Nevertheless, Union organization in Leeds was not easily achieved. See E. E. Burgess, 'The Soul of the Leeds Ghetto', *Yorkshire Evening News*, 21 January 1925.

[61] However, when Rudolf Rocker went to Leeds in 1901, after the Jewish labour movement in London, with which he was closely involved, had run into difficulties, he found 'the character of the Jewish population of Leeds as a whole' to be 'most rigidly conservative and uninformed' in spite of the existence of 'a fairly large Jewish trade union organisation among the workers in the clothing industry'. Rocker, *op. cit.*, p. 153.

[62] *Yorkshire Post*, 8 May 1888.

> 1,700, out of which 1,300 are members of our Trade Union. We belong to the local Trades Council, to the General Federation of Trade Unions and to the Labour Representation Committee and, since our formation in 1892 we have always been in the front rank of the Trade Union movement. It is therefore false to state that the Jews avoid Trade Unions.[63]

It would be fallacious to assume, however, that the situation in Leeds meant that conflict between Jewish and non-Jewish workers did not exist, and in this connection it is possible to make a second point of general interest. An objection raised against Jewish immigrants by the anti-alienists was that they were a source of cheap labour. Arnold White, for example, one of the leading anti-immigrationists, could write in *The Modern Jew* of the 'cheap labour employed by the sweating masters of the East End and the other great towns of England'.[64] This was used, along with an infinitely elastic number of other characteristics, to justify the exclusion from Britain of 'undesirable' aliens, who, it was stated, 'depressed the Englishman's standard of comfort' and introduced a whole range of additional problems into British society".[65] A similar view about the depression of living standards prevailed in the Leeds Trades Council, which on 8 February 1893 resolved:

> That this Council is of opinion that the continual influx of thousands of aliens into this country from the Continent, overstocking an already depressed labour market, is a serious evil to the workers, especially in our domestic industries and agrees to unite with the trades councils of the country in making representations to the Government on the matter.[66]

In contrast to anti-immigrationist and Trades Council opinion, the 1903 Royal Commission was inclined to stress the very severe competition which prevailed among the lower grades of alien labour itself rather than the competition complained of by the host workers.[67] More recently, it has been suggested that as regards the tailoring industry, Jewish and native workers were essentially in non-competing groups.[68] The evidence from Leeds illustrates the complexity of the real situation and the danger of making general pronouncements on the problem.

Different methods of production which existed side by side in the ready made clothing industry in Leeds, coupled with the extreme subdivision of labour helped to thwart a general trade union organisation in the trade. Differences opened up between skilled male and unskilled female workers as well as among the unskilled women themselves and between workshop and factory employees. What is important here is that differences, dependent on the individual or group relationship to the means of production, co-existed with antagonisms which were affected by racial/ethnic considerations. For example, Isabella Ford, one of the leaders of the tailoresses' strike in 1889, attempted to link the Tailoresses' Union with the Jewesses' Union, but differences were too great to be overcome.[69] But the racial/ethnic factor had wider consequences than this. The existence of a ready supply of outworkers (mainly Jewish) meant that factory employers not only had a pool of reserve labour which they could utilise during busy periods in what was a seasonal trade, but also a potential strike-breaking force. That Jewish workers did engage in such activity is beyond doubt[70] and it was such action, in fact, which was cited against the Jewish Pressers' Society when it made an unsuccessful attempt to join the Leeds Trades Council.[71] There was, therefore, competition through labour substitution between Jewish and non-Jewish workers. In addition to this, problems were created at the bespoke end of the tailoring trade, which arose through workshops taking in bespoke orders and producing a cheaper type of made-to-measure clothing which competed with similar goods produced by the bespoke tailors of the host community.[72] The tendency which has existed to discuss the tailoring trade in terms of an exclusive bespoke end and a cheap, ready made sector has meant that this competition has hardly received the attention it deserves.

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[63] *R.C.* 1903, vol. II, p. 738.

[64] A. White, *The Modern Jew* (1899), p. 193. See also his remarks to the *Select Committee on . . . Sweating* B.P.P., 1888, XX, p. 44.

[65] *R.C.* 1903, vol. II, p. 15.

[66] Leeds Trades Council Minutes 8 February 1893. I am grateful to the Secretary of the Leeds Trades Council for permission to quote this source.

[67] *R.C.* 1903, vol. I, p. 19.

[68] Garrard, *op. cit.*, pp. 165–6. For contemporary support of these views in Leeds see the comments of Hugh Crilly, Secretary of the Leeds and District Foremen Tailors' Association in 'Life and Labour in Leeds', in *The Tailor and Cutter*, 7 September 1899, pp. 439–40 and those of Sam Freedman, Secretary of the local branch of the Amalgamated Society of Tailors. *Ibid.*, p. 551.

[69] Hendrick, *op. cit.*, p. 116.

[70] *Yorkshire Factory Times*, 15 June 1894. A strike at Arthurs' by the pressers was defeated by Jewish outworkers. It needs to be emphasised, however, that Jewish labour did not have a monopoly over strike breaking activity. See Hendrick, *op. cit.*, p. 116.

[71] Hendrick, *op. cit.*, p. 117.

Overall, while it would be erroneous to emphasise competition to the extent of White's arguments – the male clothing worker in the ready made factories, for example, was not affected by Jewish competition – there were areas within the outwork ready made sector where competition and conflict did occur, as it did in the relatively overlooked cheap bespoke end and in strike-breaking activity. At the same time, it has to be remembered that in general in Leeds the workshops, where the Jews were concentrated, assisted rather than competed with the factories,[73] and that competition for work was extremely severe among the Jewish workers themselves.[74]

In brief it is possible to summarise the two general points under consideration as follows. The 1885 and 1888 strikes and the developments which surround them indicate a degree of labour consciousness and incipient acculturation among Jewish immigrants which have not yet been sufficiently emphasised. In addition to this, however, the specific antagonistic and divergent interests of host and immigrant labour, which have been too simply analysed, need to be constantly kept in mind.

In concluding this survey of early Jewish Trade Union activity and related issues in Leeds, it ought to be noted that an impetus towards stronger and more effective unionism in the tailoring trade came after 1909. The Trade Boards Act of that year gave an incentive to organisation, since meetings and discussions led to a 'corporate consciousness' among the workers and provoked the hope that changes in working conditions were possible.[75] Consequent upon this, the Amalgamated Jewish Union increased its national membership between 1910–13 from 950 to 4,465, drawing increasing strength from the abolition of homework and the rationalisation of production, which led to a factory-based clothing industry.[76] In this context the strikes of 1885 and 1888 in Leeds should be seen, respectively, as the first major victory and defeat of a Jewish tailoring trade union development in the city, which began in the 80's, which had 'a strength and continuity without parallel elsewhere in Jewish immigrant communities'[77] in Britain, which increased in numerical strength after 1909, before beginning to merge into the general trade union tailoring movement in 1915.[78]

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[72] *Ibid.*, p. 33. See also *Select Committee on . . . Sweating* . . . B.P.P. 1889, XIV–I, p. 362. Garrard, *op. cit.*, pp. 165–6 omits any mention of cheap bespoke.

[73] Hendrick, *op. cit.*, p. 23.

[74] *Ibid.*, p. 33.

[75] Tawney, *op. cit.*, p. 91.

[76] *Ibid.*

[77] Gartner, *op. cit.*, p. 121.

[78] L. Saipe's notes on the tailoring industry in Leeds. I am grateful to Mr. Saipe for allowing me to read these.

SHORTER CONTRIBUTIONS AND NOTES

EARLY BRONZE AGE POTTERY FINDS FROM NORTHERN HOLDERNESS

By T. G. Manby

The distribution of Early Bronze Age pottery in East Yorkshire is dominated by the finds from barrows on the chalklands of the Yorkshire Wolds. This distribution is continued into the lowlands of Northern Holderness by pottery from Mortimer's Garton Slack and Driffield Barrow Groups.[1] There are also scattered finds of Early Bronze Age Vessels from the sand and gravel areas along the headwaters of the River Hull. Two such finds are preserved in the private museum of Messrs. C. and E. Grantham, North Street, Driffield, and are published here by their kind permission (Fig. 1).

BRANDESBURTON, Barff Hill (Approx. Nat. Grid Ref. TA 093498). Three vessels were found during the working of a gravel pit in the 1930's, their relationships are not recorded but their completeness suggests they originally accompanied burials. The pit was at about 20 ft. O.D.

1. Food Vessel, Type 3, 6.1 in. (15.5 cm.) high; 6.3 in. (16 cm.) – diameter rim; 3.9 by 4 in. (10 by 10.3 cm.) – diameter base. Brown fabric with much crushed chalk and flint grit. Incised diagonal lines on the shoulder, rim and rim bevel. Protruding foot.
2. Food Vessel, Type 5a 4½ in. (11.5 cm.) high; 5.1 in. (13 cm.) – diameter rim; 3.2 in. (7.8 cm.) – diameter base. Smooth orange-buff fabric, black core. Decorated with rows of vertical cord maggot impressions on the exterior and rim bevel.
3. Accessory Cup. 2.8 in. (7.2 cm.) high; about 2¾ in. (7 cm.) – diameter rim; 1.4 in. (3.6 cm.) – diameter base. Soft coarse reddish-buff fabric, scored surface. Abraded rim, partly broken and missing.

LOCKINGTON, Bryan Mills Farm. (Nat. Grid Ref. TA 014464). In 1953, during the digging of the foundations for a petrol tank in the stackyard, the remains of two decayed human skeletons were found with two pottery vessels. Unfortunately only one vessel was preserved. The site was at about 20 ft. O.D. on a gravel terrace on the northern bank of Bryan Mills Beck.

4. Food Vessel, Type 2. 6.1 in. (16.6 cm.) high; 6.5 in. (15.6 cm.) – diameter rim; 3.5 in. (9 cm.) – diameter base. Hard reddish-brown fabric with greyish tones. Decorated with diagonal cord maggot impressions on the ribs and rim. Marked foot with finger moulding hollows around the base.

The Accessory Cup from Brandesburton has an individualistic shape without any immediate parallel in Northern England. The three Food Vessels described are readily paralleled by vessels found in the Yorkshire Wolds. Some 220 Food Vessels are known from sites in the East Riding, of these more than a third are Abercromby's Type I (Lugged) and almost as numerous are the Type 3 vessels.[2] The smaller Food Vessel from Brandesburton, Abercromby Type 5a, is a rare variety represented on the

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[1] J. R. Mortimer, *Forty Years Researches in British and Saxon Burial Mounds in East Yorkshire* (1905), pp. 208–97.

[2] J. Abercromby, *A Study of the Bronze Age Pottery of Great Britain & Ireland* (Oxford 1912), Vol. I, pp. 93–4.

Wolds by vessels from Garrowby Barrow C99,[3] Goodmanham Barrows CXI and CXXI,[4] Huggate Barrow 225[5] and Rudston Barrow LXVII.[6] A vessel of this type also comes from Quernhow, in the Vale of Mowbray, and accompanied a primary cremation burial.[7] This site had vessels of Types 2 and 3, accompanying satellite interments, that are good typological parellels to the Lockington and Brandesburton pottery.[8]

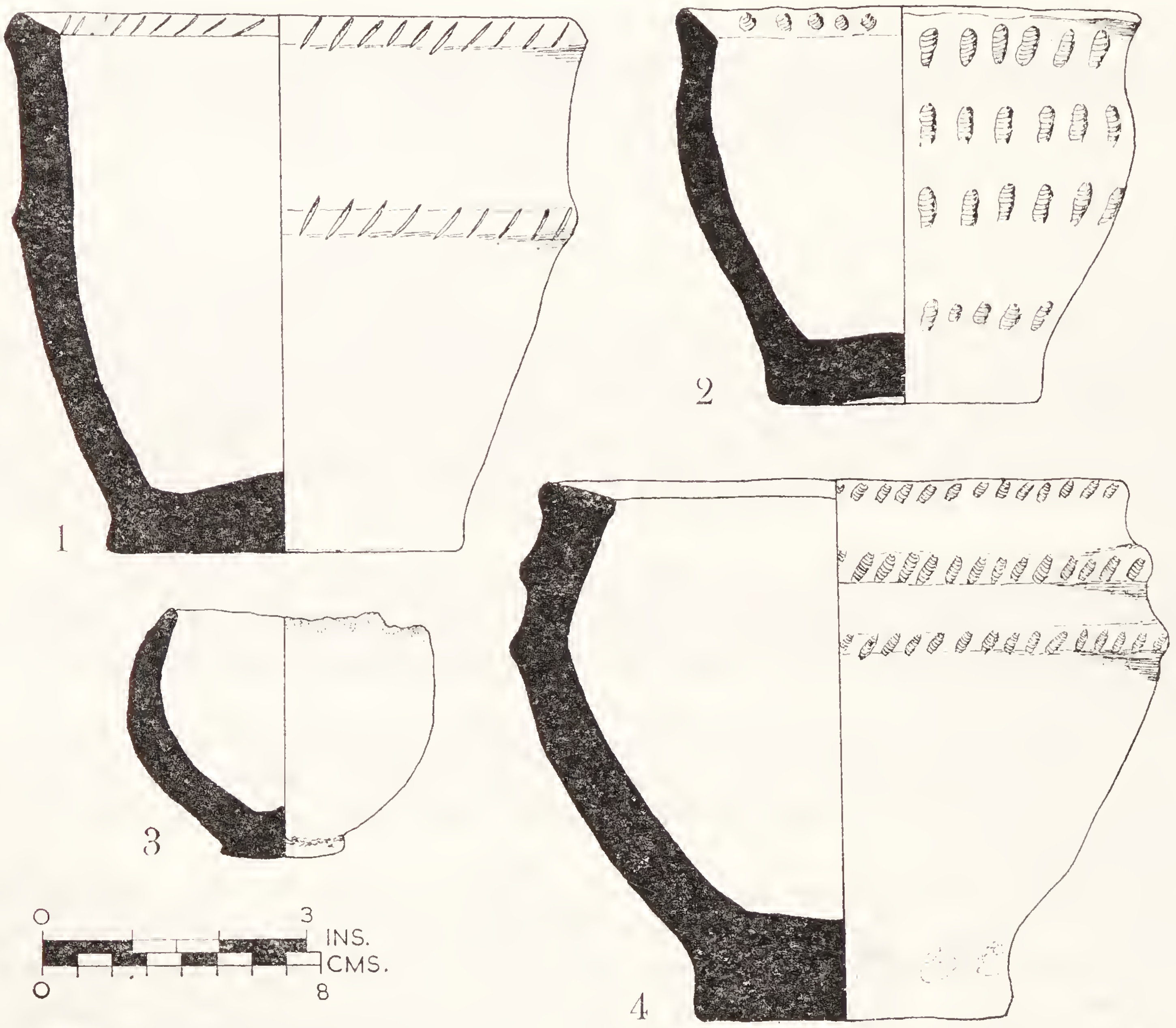

Fig. 1. 1–3: Food Vessels and Accessory Cup found at Brandesburton; 4: Food Vessel found at Lockington. ($\frac{1}{3}$).

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[3] Mortimer, *op. cit.*, p. 149, Fig. 396.

[4] W. Greenwell, *British Barrows* (1877), pp. 320 & 330.

[5] Mortimer, *op. cit.*, p. 302, Fig. 905.

[6] Greenwell, *op. cit.*, p. 258.

[7] D. M. Waterman, 'Quernhow: A Food Vessel Barrow in Yorkshire', *Ant. J.*, XXXI (1951), pp. 7 & 19, Fig. 7. 1.

[8] *Ibid.*, pp. 9–11, Figs. 7. 2 & 5.

THREE BEAKERS FROM THE HAMBLETON HILLS, N.R.

By Raymond A. Varley

On the July 9th 1864 Mr. Fox obtained objects from Mr. Johnson of Hesketh Hall, found in a barrow on the moor adjoining the Hall; these were presented to the Philosophical Hall Museum. After Denny had examined them he decided on another excavation at the barrow. In August and September 1864, accompanied by Messrs. Fox and Horsfall, he dug into the remainder of the barrow.[1] Five vessels were discovered, but only three were preserved. These were two complete Beakers, and sherds of another. The Beakers were presented to the Philosophical Hall Museum and later deposited in the City Museum, Leeds and the two complete beakers have been illustrated in a sketch drawing by Elgee.[2] Unfortunately the two complete beakers were smashed, but not destroyed,[3] during an air raid in World War II.

Hesketh Hall (Nat. Grid Ref. SE/500870) is situated half a mile north-east of the village of Boltby and six miles north-east of Thirsk. At High Barn, half a mile south-east of the Hall are two large barrows (SE/506868). These, 60 to 70 ft. in diameter[4] are now in cultivated fields, and it is probably one of them that Denny dug into. They are situated on Hambleton Mosses at about 1,010 ft. O.D., on limestone.[5] In the Late Neolithic this area was under mixed forest in which clearance was beginning, but it is now covered with bracken, heath and rough grassland with outcrops of limestone and springs.

In this area are a number of barrows and earthworks, and a promontory fort on Boltby Scar. The whole area is rich in flints; many arrowheads, scrapers and flint hammers have been found.[6]

Denny published an account of this excavation in *Notice of Early British Tumuli*[7] (1865), but no plan was published. He states that the barrow was then conical, 50 ft. in diameter and 3½ ft. high, and composed of the local limestone and soil. The central cairn 5 ft. below the surface, of flat limestone, covered several inhumations with pottery fragments, flints and shells. There was a further inhumation burial, accompanied by a bead necklace near the neck, on the north side 2 ft. below the surface. On the east side was a layer of cremated human bones 3 ft. from the surface.

From this account of the excavation, the primary burials were in the central cairn, with two secondary burials. At least seven burials were discovered, six inhumations and one cremation. The primary inhumation burials were accompanied by the Beakers, then found in fragments.

The Beakers (Fig. 2)

1. The fragments of this vessel have been reconstructed to show that it belongs to Clarke's Primary Southern British Beaker Group S1, corpus No. 1244.[8] The fabric has a hard buff reddish exterior and a smooth brown to buff with reddish

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[1] Denny, H., 'Notice of Early British Tumuli on the Hambleton Hills, near Thirsk', *Proc. Yorks. Geol. & Poly. Soc.*, IV (1865), p. 490.

[2] Elgee, F., *Early Man in North-East Yorkshire* (1930), Fig. 14 E and F.

[3] The sherds (Fig. 3. 1–3) were found in a box in Leeds City Museum in 1964. In black ink on these sherds is 'Boltby, near Thirsk'. Accession number G5 D173.

[4] Hayes, R. H., 'The Hambleton Street', *Trans. Scarborough & District Arch. Soc.*, III (1960), pp. 23–4.

[5] Wilson, V., *British Regional Geology, East Yorkshire and Lincolnshire* (1971), pp. 48–9.

[6] Thomas, N., *Prehistoric England* (1960), p. 250; Hayes, *op. cit.*, p. 25.

[7] Denny, *op. cit.*, pp. 490–4.

[8] Clarke, D. L., *Beaker Pottery of Great Britain and Ireland* (1970), Vol. 2, p. 506.

toned interior. The core is black to reddish and contains pieces of limestone and quartz grit. No complete profile can be reconstructed but it would seem about 7 in. (17.7 cm.) high and 5¼ in. (13.3 cm.) diameter at the rim. The decoration consists of horizontal lines with a vertical lozenge-shaped pattern at the end, between four lines on the upper part. Below this are plain horizontal lines between vertical lines. Very faint comb impressions can be seen in places in the lines.

Primary Southern British Beakers are not numerous in Yorkshire; there are thirteen sites on the northern fringe of the Wolds, stretching northwards to the Yorkshire Moors.[9] The rise of the Primary Southern British Beaker group reflects the gradual and piecemeal assimilation of Wessex and Northern/Middle Rhine groups by an increasingly divergent branch of the Developed Northern tradition. The overall evidence available equates the Primary Southern Beaker group with the latter half of the Developed Northern Beaker phase and the initial part of the Late Northern development. An absolute date can only be derived from the already indirect dating for the Developed Northern Beakers and a Carbon date for Final Southern (S4) Beakers at Wattisfield, Suffolk, at (BM–77) 1560 ± 150 B.C.[10]

2. This is illustrated by Elgee,[11] Clarke's corpus No. 1242, destroyed Developed Southern British Beaker group S2 (E),[12] Only three sherds have been preserved; a rim sherd, body sherd and a base sherd. A single complete profile cannot be reconstructed. The rim diameter was originally about 5½ in. (13.9 cm.) and the base 3¼ in. (8.3 cm.) diameter; the height cannot be calculated. The fabric is hard and contains pieces of limestone grit and quartz grit; it has a buff to brown exterior and buff brown with dark grey to black toned interior, with a reddish grey to black core. The decoration consists of a V-shape pattern on the neck, between horizontal grooves. On the lower part and on the base are sloping lines between horizontal lines. Very faint comb impressions can be seen in places in the lines.

3. This is also illustrated by Elgee,[13] Clarke's corpus No. 1243, destroyed Developed Southern British Beaker group S2 (E).[14] Base, with a hard smooth fabric which contains pieces of limestone and quartz grit, with a reddish buff exterior and a dark grey interior with a dark grey to black core. The base is 3 in. (7.5 cm.) in diameter; the decoration consists of one comb-impressed line.

Both (Fig. 2. 2–3.) belong to Clarke's Developed Southern British Beaker group S2 (E), and were previously thought to have been destroyed.[15] One of the six major regional clusters of Developed Southern beakers whose foci line the Border Counties, centres on the Yorkshire Wolds and includes 23 sites on the Wolds and 7 outliers in north Lincolnshire and in the Pennine zone of west Yorkshire.[16] The distinctive features of the Border Counties Beakers link them with the Yorkshire concentration; the relative distributions suggest that the link would be direct and by sea. The Developed Southern group successfully appropriated the former area of Northern Beaker groups, encircling the Late Northern Beakers' survivors.[17]

These from Boltby would have 'cylinder' necks (S2 (E)) (Fig. 2. 2–3.); there are approximately 41 sites representing the cylinder-necked eastern counties variant. There are no Developed Southern Beakers known from the Continent. The dating evidence for the Developed Southern phase should cover the period *c.* 1600–1500 B.C.

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[9] *Ibid.*, Vol. 1, p. 201; Vol. 2, Map 7.

[10] *Archaeological site Index to Radiocarbon Dates for Great Britain and Ireland*, C.B.A. (1971), 3J. Beaker; *Arch. News Letter* (1961), Vol. 7, No. 5, p. 102.

[11] Elgee, *op. cit.*, Fig. 14 E.

[12] Clarke, *op. cit.*, Vol. 2, p. 506.

[13] Elgee, *op. cit.*, Fig. 14 F.

[14] Clarke, *op. cit.*, Vol. 2, p. 506.

[15] These sherds are preserved in Leeds City Museum.

[16] Clarke, *op. cit.*, Vol. 2, Map 8.

[17] *Ibid.*, Maps 6 and 8.

Distribution of Sites

The Beaker People have traditionally been known from their burial-mounds, from which most of the Beakers have been recovered. Occupation sites are known, one was excavated at Beacon Hill, Yorkshire,[18] where Beaker occupation dated from the Middle Neolithic phase.[19]

From the great settlement area of the Yorkshire Wolds the Beaker People moved north-west to the Howardian Hills, the limestone hills near Pickering, the Windypits near Helmsley, Hambleton Hills and ultimately reached the Cleveland Hills. Over the years a large number of barrows have been excavated in these areas, in which Beakers have been found. This shows clearly the movement and the route taken.

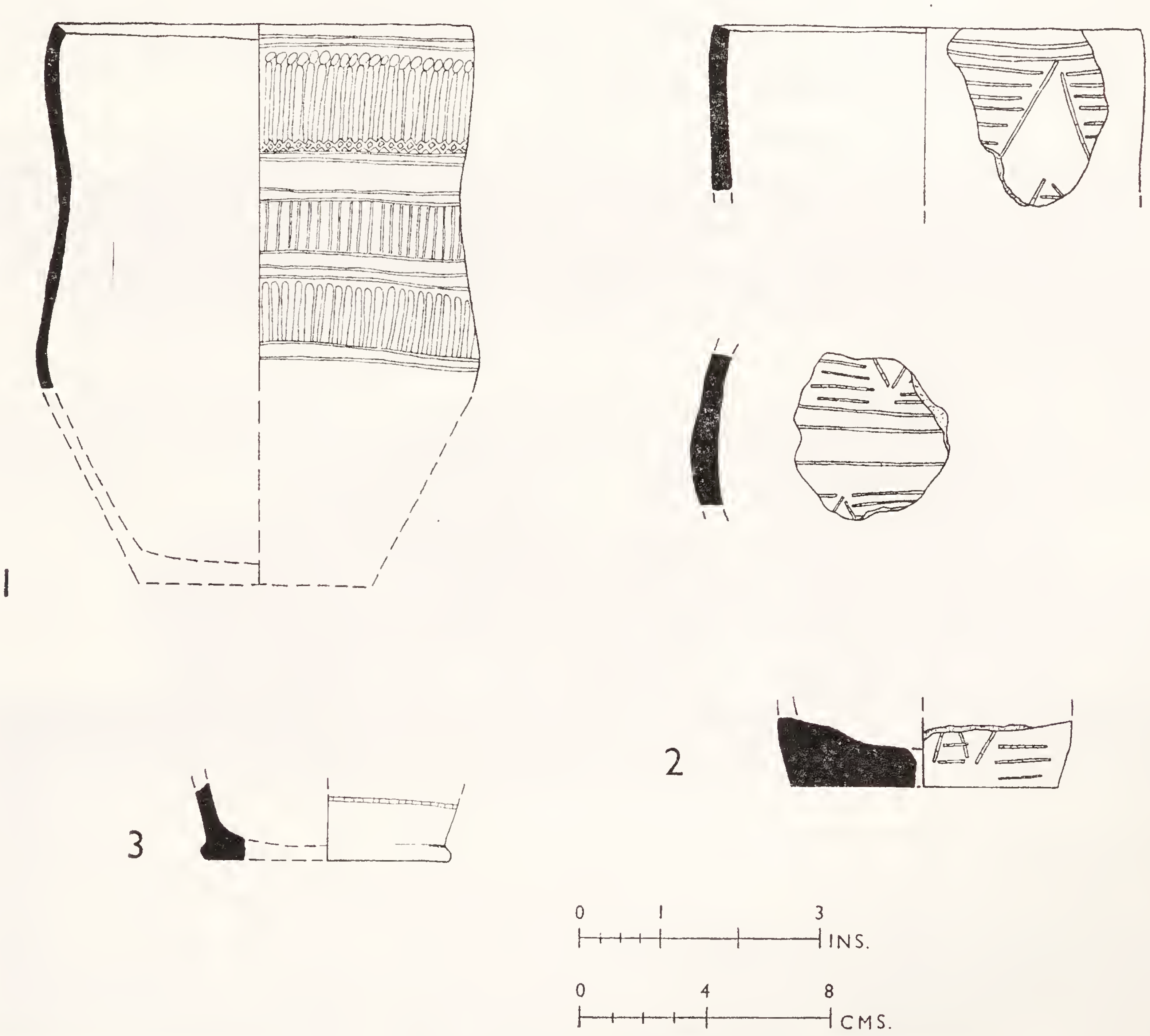

Fig. 2. Beakers from the Hambleton Hills. (⅓).

Five Beaker finds have been recorded from the Howardian Hills. The lower part of a Southern British S4 from Whitwell,[20] European Bell Beaker from West Lodge Gate,[21] a Developed Northern British Beaker and a Footed Bowl from Amotherby,[22] and a small Beaker sherd from Gilling.[23]

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[18] Moore, J. W., 'Excavations at Beacon Hill, Flamborough Head, East Yorkshire', *Y.A.J.*, XLI (1964), pp. 191–202.

[19] Piggott, S., *Neolithic Cultures of the British Isles* (Cambridge 1954), p. 378.

[20] Newbigin, N., 'A Bronze Age Beaker from Whitwell Hill, N.R. Yorks', *Y.A.J.*, XXXIII (1937), p. 119; Clarke's corpus No. 1407.

[21] This Beaker was previously listed under York Fox, 'Two Beakers of the Early Bronze Age &c.', *Arch. Camb.*, LXXX (1925), p. 29; further study revealed the present site, Manby, T. G., 'Beakers from the Howardian Hills, N.R.', *Y.A.J.*, CLV & CLVI (1958), p. 397; Clarke's corpus No. 1343.

The Beaker People moved into the Pickering area, Ryedale near Helmsley and on to the Hambleton Hills at Boltby.[24] From the limestone hills near Pickering, four Beakers are recorded: a Parimary Southern British S1 from Monklands,[25] Northern British/North Rhine Beaker near Pickering,[26] Handled Southern British 4(C) one mile north of Pickering[27] and a European Bell Beaker from Raindale.[28]

In the Ryedale Windypits,[29] a total of 14 Beakers have so far been recovered, and it is likely that more will come to light. There is a Handled Beaker H (FV) from Snip Gill Windypit,[30] four All-Over-Cord Beakers and two plain Beakers from Antofts Windypit,[31] 5 All-Over-Cord Beakers and a European Bell Beaker from Asherry Windypit[32] and 1 All-Over-Cord from Buckland's Windypit.[33]

Beakers have also occurred north of Boltby, on the Cleveland Hills. At Ingleby Greenhow one was found in a stone cist with an inhumation,[34] the lower part of a Beaker was found in a barrow at Mount Pleasant.[35] At Nanny Howe a Northern British N2 was excavated from a barrow,[36] and east towards the coast at Egton a European Bell Beaker was found in a stone cist.[37] Four are also recorded from Newton Mulgrave,[38] two being Handled Beakers, but these were destroyed in a fire at Liverpool Museum.

Acknowledgements

The writer wishes to record his indebtedness to Mr. C. M. Mitchell, Director of the City Museum, Leeds for granting permission to publish this account of the Beakers. Also to Miss Elizabeth Pirie, of the Leeds City Museum for making this pottery available for study.

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[22] *Ibid.*, pp. 397–8; Clarke's corpus No. 1221.

[23] *Proc. Prehist. Soc.*, IV (1938), p. 215.

[24] Denny, *op. cit.*, pp. 490–4.

[25] Kirk, J. L., 'Opening of a Tumulus near Pickering', *Yorks. Phil. Soc.* (1911), p. 57; Clarke's corpus No. 1395.

[26] Varley, R. A., 'A Beaker and Two Food Vessels from Blakelow, near Great Longstone, Derbyshire', *D.A.J.* (forthcoming); Clarke's corpus No. 1361.

[27] Bateman, T., *Ten Years Diggings* . . . . (1861), p. 231; Clarke's corpus No. 1360.

[28] This Beaker forms part of the Kedall collection in the Yorkshire Museum. Information from Mr. G. F. Willmot, late of the Yorkshire Museum.

[29] *History of Helmsley, Rievaulx and District* (1963), pp. 16–27.

[30] Hayes, R. H. and Rutter, J. G., 'The Discovery of a Handled Beaker in a Fissure near Helmsley, Yorkshire', *Ant. Journ.*, XXXV (1955), pp. 223–4; Clarke's corpus No. 1388.

[31] *History of Helmsley* . . . ., pp. 363–4, Fig. 4.; Clarke's corpus Nos. 1222–7.

[32] *Ibid.*, pp. 362–3, Fig. 4; Clarke's corpus Nos. 1228–34.

[33] *Ibid.*, pp. 365–6; Clarke's corpus No. 1251.

[34] Information from Mr. A. L. Pacitto, *Y.A.J.*, XLII (1970), p. 391.

[35] Sockett, E. W., 'A Bronze Age Barrow at Mount Pleasant, near Normanby, North Riding', *Y.A.J.* (1971), pp. 33–8.

[36] Hayes, R. H., 'Nanny Howe, Coate Moor, Cleveland', *Y.A.J.*, CLXIV (1966), pp. 577–81, Fig. 3; Clarke's corpus No. 1260.

[37] Varley, R. A., 'A Beaker from Egton Bridge, North Yorkshire', *The Brigantian*, III (1974), forthcoming.

[38] Elgee, *op. cit.*, pp. 56–7, Fig. 2.

PLATE 1. Giant's Hill, Swine: view during excavation. *Ph.* Mary Varley

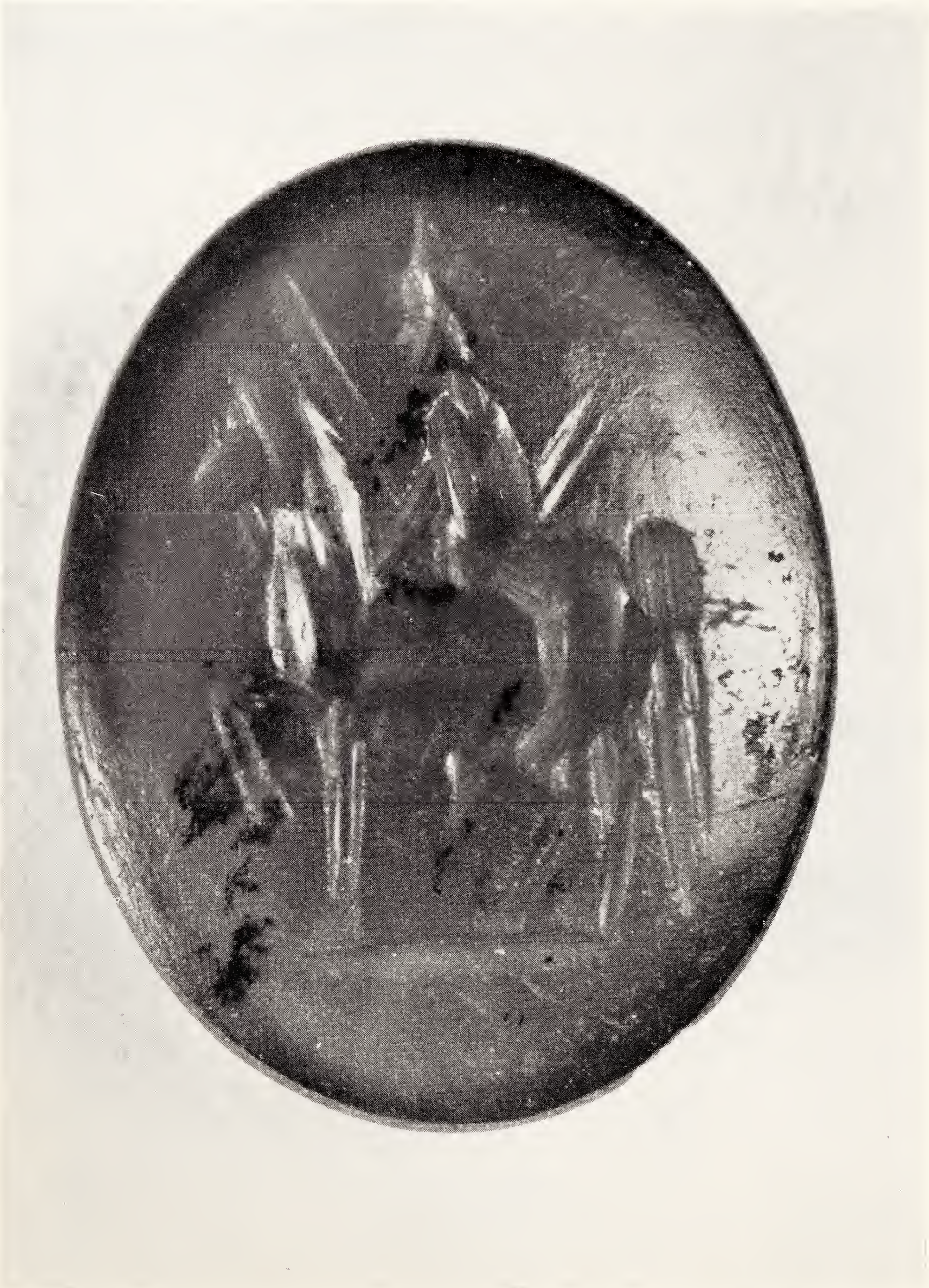

Plate 2. Cornelian Intaglio from Aldborough (13 mm. × 10.5 mm.) [Henig: Intaglio, p. 180]

BRONZE AGE FINDS FROM SKIRCOAT, HALIFAX

By Raymond A. Varley

John Watson records three urns found at Skircoat prior to 1775. He illustrates and described a complete urn in his *History and Antiquities of the Parish of Halifax:*[1] 'It was found with two others, at the bottom of the walk near Shaw-hill, leading to the house in Skircoat called 'Heath'. They lay in a line, one yard deep, and one yard asunder (apart), with their mouths downwards. This contained calcined bones and dust; the two others were broke in pieces. It is eight in. deep, stands upon a bottom, of four in. diameter, and where there is no moulding, is from twenty-one in., or thereabouts, to twenty-three in. in circumference'.[2] This urn has not survived, and belonged to the *Secondary Series* of the Collared Urn tradition of I. H. Longworth's 'Collared Urns with linear incised and lattice/lozenge pattern on the neck in England and Wales'.[3] In shape and decoration this vessel clearly belonged to the *North Western Style*. The form, with a neck straight but converging towards the shoulder is virtually confined to the North of England; vessels carrying linear incised lattice or lozenge designs on the neck have their greatest density in the North Western counties.[4]

Heath Hall which Watson refers to has long since been demolished, and the site is now a residential built-up area half a mile south-west of the Parish Church of Halifax. The site (Nat. Grid Ref. SE/091243) is situated at about 800 ft. O.D. on rocks of the Lower Coal Measures one mile north of the River Calder.

Seven sherds that belong to a Collared Urn (Fig. 3. 1) and one sherd from another of the same type (Fig. 3. 2) are all that have survived of the Skircoat urns.

1. Seven sherds are all part of the collar of the urn, five can be joined and the other two sherds are part of the rim. This urn would have a 6⅜ in.-diameter rim, the fabric is soft corase reddish to buff with a reddish core, and with shale and large pieces of stone grit which erupt through the surface in places. The decoration on the collar is of incised herringbone pattern separated by horizontal lines. The internally bevelled rim is decorated by incised crosses. These fragments are Middle Bronze Age. [They are in the Bankfield Museum school loan service].
2. This sherd is a collar and neck fragment also from a collared urn. The fabric is hard coarse buff to brown with a black core and inner surface. The decoration on the collar is of shallow incised lines. Middle Bronze Age. [Bankfield Museum school loan service].

Also found at Skircoat, prior to 1775, was a Bronze Age axe. John Watson's *History and Antiquities of the Parish of Halifax* informs us that 'A British celt of Brass was found, a few years ago in a bed of clay, in the township of Skircoat'.[5] The exact location of the find is not known; Watson illustrates this axe.[6]

Skircoat is 1¼ miles south of the Parish Church of Halifax (Nat. Grid Ref. SE/090231). Printed in black ink on the side of the axe (Fig. 3. 3) is the word 'Skircoat' and Bankfield Museum accession number is AH 2268. This axe was probably presented to Bankfield Museum by Christopher Rawson in 1832.[7] The axe was in the Bankfield Museum school loan service and has been transferred to the Tolson Memorial Museum, Huddersfield where it is now on permanent loan.

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[1] Watson, J., *History and Antiquities of the Parish of Halifax* (1775), Plate 4 : 3.

[2] *Ibid.*, p. 61.

[3] Longworth, I. H., in Pacitto, A. L., 'The Excavation of Two Bronze Age Burial Mounds at Ferry Fryston in the West Riding of Yorkshire', *Y.A.J.*, XLII (1969), p. 303.

[4] *Ibid.*, p. 301, Fig. 8.

[5] Watson, *op. cit.*, p. 31.

[6] *Ibid.*, Plate 4 : 3. Scale and section omitted in the drawing.

[7] Ling, H., *The Yorkshire Coiners and Notes on Old and Pre-historic Halifax* (1906), pp. 296–7.

3. Winged-flanged axe, length 5 in., width of cutting edge 2$\frac{1}{8}$ in., width of butt $\frac{7}{8}$ in., greatest width across flanges 1$\frac{1}{2}$ in.; weight 13 oz. The axe is in good condition; the surfaces are pitted in places and the golden metal shows in places through the dark green patina.

This type of axe is confined to Northern England and Scotland, the greatest concentration of finds being in Yorkshire. A good parallel for this winged-flanged axe type was found at Lake Lock, Wakefield in July 1869[8] and is now in the Wakefield Museum. It is difficult to determine when wing-flanged axes were first brought into use as associated finds are so few. A wing-flanged axe found in the Welsh hoard of Guilsfield is part of a Late Bronze Age Hoard.[9] An axe found at Hotham Carr, East Yorkshire was in a hoard of true palstaves, belong to the Hotham Carr Phase of the Middle Bronze Age.[10]

The writer wishes to thank Mr. R. A. Innes, Director of Bankfield Museum, for making these finds available for study and for granting permission to publish them.

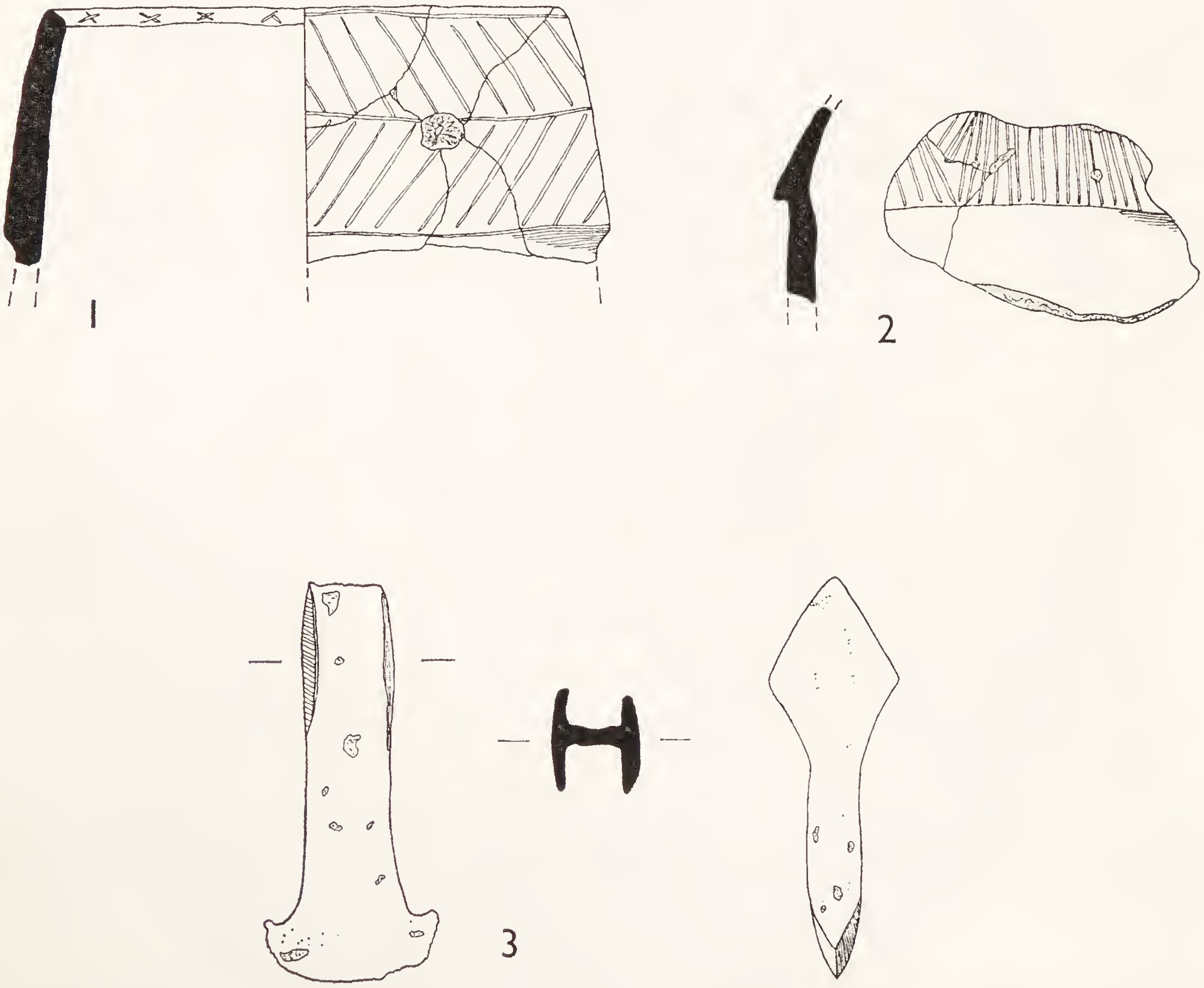

FIG. 3. Bronze Age material from Skircoat, Halifax. 1 and 2: sherds of Collared Urns, 3: Winged-flanged Axe. ($\frac{1}{3}$).

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[8] Varley, R. A., 'Bronze Age Axes from the Wakefield District'. To be published shortly.

[9] Smith, M. A., 'Some Somerset Hoards and their Place in the Bronze Age of Southern Britain' *P.P.S.* (1959), p. 173, Fig. 6 : 3. Map 4b.

[10] Burgess, C. B., *Bronze Age Metalwork in Northern England c. 1000 to 1700 B.C.* (Newcastle, 1968), p. 3, Fig. 3 : 3.

BRONZE AGE POTTERY AND A BASAL-LOOPED SPEARHEAD FROM WEST YORKSHIRE

By J. A. Gilks

I would like to record my thanks to the following individuals for permission to publish material in their keeping: Mr. E. W. Aubrook, Tolson Memorial Museum, Huddersfield; Mr. R. A. Innes, Bankfield Museum, Halifax; Mr. P. S. Baldwin, Craven Museum, Skipton and Mr. C. M. Mitchell, City Museum, Leeds. To Dr. I. H. Longworth, British Museum, Dr. D. L. Clarke, Cambridge and Mr. C. B. Burgess, Newcastle-upon-Tyne, I owe a special debt of thanks for their assistance and advice on the interpretation of some of the finds referred to in this note.

BEAKERS

Lea Green, Grassington

Preserved in the Craven Museum, Skipton, is a fine Late Neolithic/Early Bronze Age Beaker, found about 1890 by Bailey J. Harker during the excavation of cist and secondary crouched inhumation burials in a round cairn on Lea Green, Grassington[1] (Nat. Grid Ref. SE/998657). The Beaker was commented upon by Raistrick[2] and Jackson,[3] but a detailed report was never published.

Description (Fig. 4. 1)

(Craven Mus. A.113). The fabric is quite hard with small pieces of grit protruding through the exterior surface. The exterior varies in colour from buff-brown to grey on the upper part of the neck. The interior is dark grey with lighter brown-grey patches and the base is covered with a thin layer of carbon. The Beaker is 18.1 cm. high, 13.3 cm. in diameter at the rim and 9.5 cm. in diameter at the base. Decoration takes the form of circumferential lines of wrapped cord impressions over the whole of the exterior surface with finger-printing round the base angle. This finger-printing is not solely decorative, but illustrates the method of attachment of the base to the body.

The Beaker, of Clarke's All-Over-Cord type, is placed in the Late Neolithic/Early Bronze Age, about 2000 B.C.[4] Beakers of this type are not common in the central part of Northern England; the principal areas of primary settlement were the Upper Thames, the Wash, the Humber estuary and the East Coast of Scotland.[5] In Yorkshire, sherds of All-Over-Cord Beakers were found above the Later Neolithic occupation horizon at Beacon Hill, Flamborough Head[6] and in the pre-barrow soil and mound material of Green Howe, North Deighton[7]. Two nearly complete Beakers are recorded as having been found associated with inhumation burials under round barrows at Aldro 116[8] and Rudston 67,[9] by Mortimer and Greenwell respectively.

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[1] Harker, J. B., 'Discovery of Prehistoric Remains at Grassington in Craven, Yorkshire,' *Antiquary*, XXVI (1892), pp. 147–9.

[2] Raistrick, A., 'The Bronze Age in West Yorkshire', *Y.A.J.*, XXIX (1929), p. 361. Fig. 8d.

[3] Jackson, S., 'Baildon Moor Exhibit', *Bradford Archaeology Group Bulletin*, 17 (1956), pp. 101, 103.

[4] Clarke, D. L., 'A Tentative Reclassification of British Beaker Pottery in the Light of Recent Research', *Palaeohistoria*, XII (1967), pp. 185–6, Fig. 1; Clarke, D. L., *Beaker Pottery of Great Britain and Ireland* (Cambridge 1970), Vol. II, p. 507, Fig. 30.

[5] Clarke (1967), pp. 185–6.

[6] Moore, J. W., and Manby, T. G., 'Excavations at Beacon Hill, Flamborough Head, East Yorkshire', *Y.A.J.*, XLI (1964), pp. 198–200, Fig. 4. 10.

[7] Wood, E., 'The Excavation of a Bronze Age Barrow, Green Howe, North Deighton, Yorkshire', *Y.A.J.*, 43 (1971), p. 13, Figs. 5. 41 & 42.

[8] Mortimer, J. R., *Forty Years Researches* .... (1905), p. 55, Fig. 100; Abercromby, J., *The Bronze Age Pottery of the British Isles* (Oxford 1912), Vol. I, Fig. 120; Clarke (1970), Vol. II, corpus No. 1215, Fig. 28.

[9] Greenwell, W., *British Barrows* (1877), pp. 258, 261; Abercromby (1912), Vol. II, Fig. 143; Clarke 1970), Vol. II, corpus No. 1376, Fig. 10.

Tinshill, near Leeds

In May 1960, Mr. J. D. Hall, of Tinshill Drive, Cookridge (N.G.R. SE/254402), discovered sherds of an Early Bronze Age Beaker whilst digging his garden. They were scattered in disturbed soil which had been levelled during building operations and were accompanied by a flint scraper and a flake. No burial was recognised.

Description (Fig. 4. 2)

(Leeds City Mus. D. 174. 1964). The Beaker is 21.7 cm. high, 15.7 cm. in diameter at the rim and 9.6 cm. in diameter at the base, in a buff-red fabric with a light to dark grey core. The interior is buff-grey and both the interior and exterior surfaces are smooth apart from occasional sand particles which protrude through and predominate on the exterior. The rim is decorated with a series of shallow pits produced by paired finger-nail impressions. A lattice pattern executed with a comb below the pits is bordered by a series of vertical finger-nail impressions, which run along the first cordon below the rim. The centre portion of the neck is covered with floating lozenges, each being filled with vertical finger-nail impressions and bordered by a bar-chevron pattern. Finger-nail impressions run along the second cordon which is bordered by two horizontal comb-impressed lines. The body of the Beaker is covered with an unevenly produced lattice pattern with eight parallel comb-impressed lines above, the space between the third and fourth being filled with vertical finger-nail impressions to produce a ladder pattern.

The Beaker belongs to Clarke's Developed Southern British Group (S2)W.[10] The decoration is similar to that found on a much-fragmented Beaker of the same class from Halton East, Skipton,[11] but the closest parallel to the Tinshill vessel is a Beaker from Gawsworth near Macclesfield on the western side of the Pennines. The Beaker, found associated with two flint knives and a scraper in a cist covered by a cairn, is complete and possesses two cordons, one below the rim and the second around the waist.[12] All the vessels described would, according to Clarke's recent classification, be broadly contemporary with Hawkes' Wessex I in Wiltshire, *c.* 1650/1600–1550/1500 B.C.[13]

Flints (*Not illustrated*)

A convex scraper produced from a primary flake with a thick cortex patch near the nose and along the right-hand edge. The flint is translucent brown-black and the implement possesses unifacial working only.

A small flake of translucent brown flint with cortex patch.

ACCESSORY CUP

Tower Hill, Warley

F. A. Leyland, in the Rev. J. Watson's *History and Antiquities of the Parish of Halifax*, records the discovery of five prehistoric pottery vessels, probably Collared Urns, a 'pottery lid' and an Accessory Cup, at Tower Hill, Warley (N.G.R. SE/054261) in 1848.[14] Two of these vessels (Collared Urns) were preserved and later presented by J. S. Stott to the Halifax Lit. and Phil. Soc. After the dissolution of the society about 1899, the vessels passed to Bankfield Museum and in 1958 to the Tolson Memorial Museum; both Collared Urns have been published by the writer.[15]

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[10] Clarke (1970), Vol. II, corpus No. 1399, Fig. 836.

[11] Speight, E. E., 'Prehistoric Remains in Upper Wharfedale', *Antiquary,* XXVII (1893), p. 122; Beaker sherds now in Craven Museum, Skipton.

[12] C.B.A. Group 5 (Lancashire and Cheshire) Archaeological Notes for 1966.

[13] As set out by Prof. C. F. C. Hawkes, C.B.A. Bronze Age Conference, London, December, 1960; further information kindly supplied by Dr. D. L. Clarke, Cambridge.

[14] Watson, J., and Leyland, F. A., *The History and Antiquities of the Parish of Halifax* (1868), 2nd Ed., pp. 58–9; Ling Roth, H., *The Yorkshire Coiners* (1906), p. 296.

[15] Gilks, J. A., 'Two Middle Bronze Age Cinerary Urns from Tower Hill, Warley, W.R.', *Y.A.J.*, XLII (1968), pp. 119–20, Figs. 1 & 2.

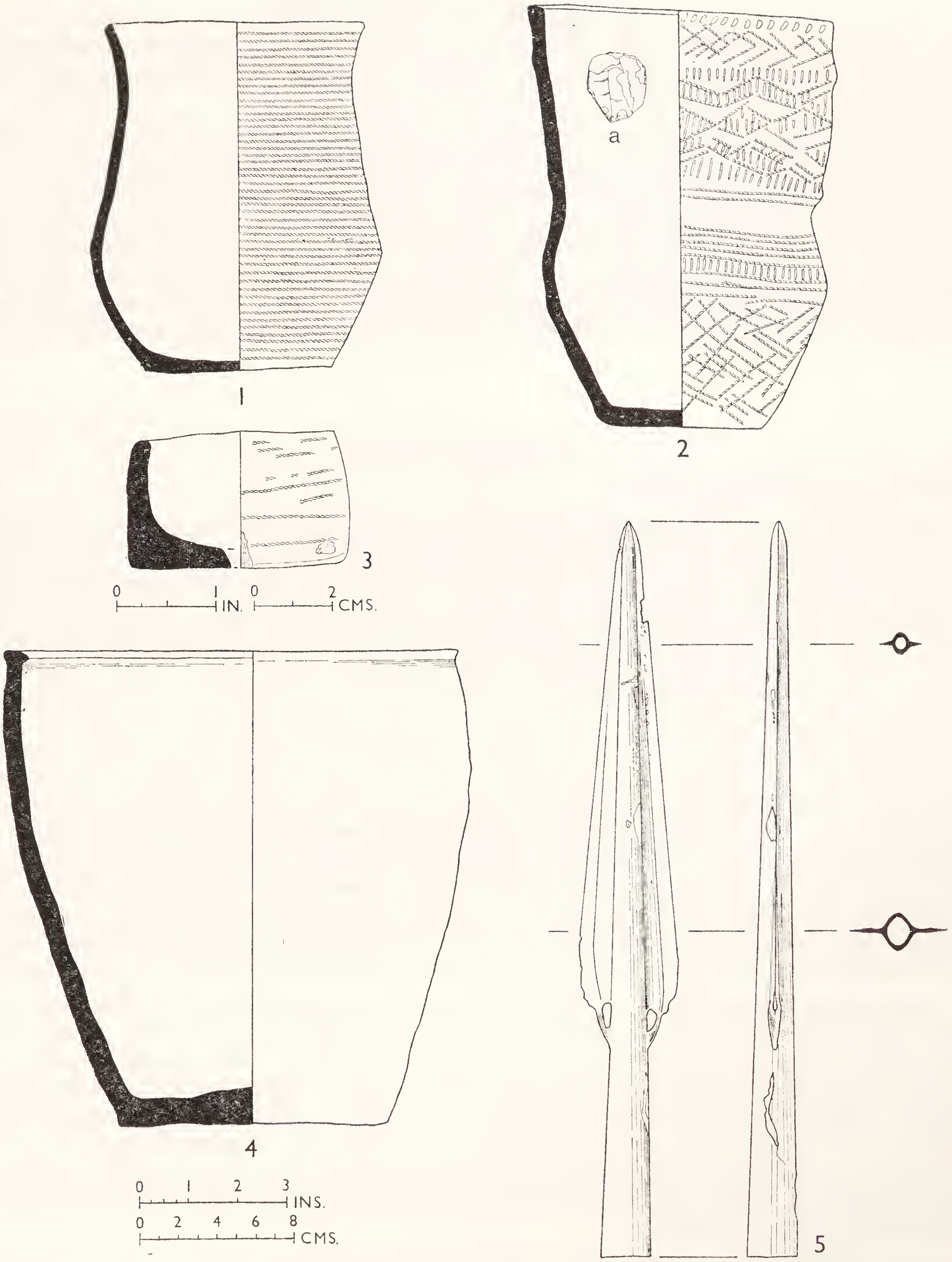

FIG. 4. Beakers from, 1: Lea Green, Grassington and 2: Tinshill, near Leeds. Accessory Cup, 3: Tower Hill, Warley. Bucket Urn, 4: Acrehowe Hill, Baildon Moor. Basal-looped Spearhead, 5: Cooper Bridge, Brighouse.
Nos. 1, 2, 4 and 5 (¼); No. 3 (½).

Description (Fig. 4. 3)

(Bankfield Mus. AP. 234). The Accessory Cup is 3.5 cm. high, 5.2 cm. in diameter at the rim and 5.6 cm. in diameter at the base. The fabric is quite soft, light orange to buff-brown in colour with darker orange-brown patches on the exterior and base. The rim, which is slightly contracted, and the interior surface is light orange with numerous shale particles, which have fired to pink and deep red, protruding through. The exterior is decorated with eight unevenly spaced circumferential lines of twisted cord; the four lines below the rim survive in places as shallow, discontinuous grooves.

Leyland noted that the Accessory Cup was inside the smallest of the three Collared Urns discovered during the winter of 1848.[16] The close proximity of the vessels to one another suggests that they had been buried at the same time and are therefore broadly contemporary in date. The small 'Pennine' Urn preserved by Stott is comparable with a Collared Urn found associated with Food Vessels at a cairn on Harland Edge, Derbyshire, and dated to 1490 ± 150 B.C. (BM. 178);[17] this places both the Harland Edge and Tower Hill Collared Urns and Accessory Cup, in terms of conventional chronology, at the end of the old short British Early Bronze Age, *c.* 1600–1400 B.C.

BUCKET URN

Acrehowe Hill, Baildon Moor

This Bucket Urn was found by the late Colonel Maude of Rylstone in a round barrow on Acrehowe Hill, Baildon Moor (N.G.R. SE/407142), early this century. There is little literary evidence relating to Maude's excavation and the exact find spot of the urn in relationship to the barrow is not known. The barrow was of composite type, constructed of gritstone boulders and soil scraped from the surrounding land surface. The urn was recorded by Raistrick[18] and Jackson,[19] but has never received the proper publication that it deserves.

Description (Fig. 4. 4)

(Craven Mus. A. 110). The Bucket Urn is 24.1 cm. high, 22.8 cm. in diameter at the rim and 13.2 cm. in diameter at the base. The vessel is buff-brown in colour with small particles of grit protruding through the interior and exterior surfaces. The T-shaped rim is also buff-brown with lighter buff-grey patches in the shallow, discontinuous, circumferential groove, below it. The exterior is smooth apart from occasional grit particles protruding through in places. The interior surface below the rim is buff-grey to darker brown to grey, and shows no signs of having been smoothed.

The greatest concentration of Bucket Urns is on the eastern side of the Pennines;[20] they occur on the North Yorkshire Moors, the chalk Wolds as far south as the Humber estuary and in central Holderness. A plain urn of similar profile came from the coast near Kilnsea on the eastern side of Spurn Head,[21] and much-fragmented Bucket Urns have been found at Robin Hood's Bay, Lastingham, Givendale Head,[22] and, on the western side of the Pennines, at Walney Island sites VI and VII.[23] The dates now available for Bucket Urn cemeteries in Southern England indicate a long life for this type of vessel, at least from the Late Middle Bronze Age into the Early Iron Age, about 1300–450 B.C.[24]

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[16] Watson and Leyland (1868), p. 59.

[17] Riley, D. N., 'An Early Bronze Age Cairn on Harland Edge, Beeley Moor, Derbyshire', *D.A.J.*, LXXXVI (1966), pp. 41–4, Fig. 10. 1.

[18] Raistrick (1929), p. 362.

[19] Jackson (1956), pp. 101–3.

[20] Henken, H., 'Ballinderry Crannog No. 2', *P.R.I.A.*, XLVII c (1941–1942), p. 22, Fig. 8.

[21] Bartlett, J., in Wenham, L. P., 'Seven Archaeological Discoveries in Yorkshire', *Y.A.J.*, XL (1960), p. 313, Fig. 9B.

[22] Elgee, F., *Early Man in North-East Yorkshire* (1930), p. 85, Fig. 30.

[23] Barnes, F., 'Pottery from Prehistoric Sites North End, Walney Island', *T.C. & W.*, N.S. LV (1956), pp. 1–16, Fig. 4. 1, 11 & 19.

[24] Preliminary statistics and general information kindly supplied by Dr. I. H. Longworth, British Museum.

BASAL–LOOPED SPEARHEAD

Cooper Bridge, Brighouse

The spearhead,[25] a Late Middle Bronze Age straight-based basal-looped type, was found by Mr. M. Craven of Dalton, Huddersfield, in August 1969, whilst he was employed at a gravel pit owned by the Hoveringham Gravel Company at Cooper Bridge, Brighouse (N.G.R. SE/165220). The gravel pit had been extended eastwards to within 30 m. of a meander loop in the River Calder, and was being deepened when the spearhead was discovered at a depth of about 9 m. in redeposited sands and gravels.[26] The blades are in sharp condition which suggests that the spearhead had not travelled far. When found, a short length of the wooden shaft projected about 20 cm. from the mouth of the socket and was secured by a single round-sectioned bronze rivet, the head of which was missing. The wooden shaft and the rivet have since been lost by the finder.

Description (Fig. 4. 5)

(Tolson Memorial Mus. 122.1.70). The spearhead is 37.7 cm. long and 5.1 cm. across the lower part of the straight-based blade. A thin dark green patina, with some small corrosion pits, covers the blade, mid-rib and socket, whilst a lighter mottled green-brown patina covers parts of the channelled blade; bright bronze metal shows through along the spine of the mid-rib and around the mouth of the socket. The basal-loops are flattened, 0.4 to 0.7 cm. across, oval in section at their connection with the blade. The blade is channelled on each side of the mid-rib, the channels narrowing towards the point. The rivet hole is 0.3 cm. in diameter and is irregular in outline. The mouth of the socket is circular, 2.5 cm. in diameter. Weight 291.0 g.

Straight-based basal-looped spearheads are nowhere attested before the Penard phase in Scotland and the Rosnöen phase in France of the 11th–10th centuries B.C.[27] They first appear in the Wallington Hoards of Shelf[28] and Farnley,[29] and at the beginning of the Carp's Tongue phase around the late 8th century at Pyotdykes in Scotland.[30] The Brighouse specimen and Shelf example are of a type with straight-based blade and are a development of spearheads belonging to the Penard phase. Basal-looped spearheads with leaf-shaped blades represent an earlier tradition than the straight-based form and are typified by spearheads of the Ornament Horizon Hoards.[31] This form appears to go back as far as Butler's Frøjk-Osterfield phase, *c.* 1300–1200 B.C.[32] There is at present no evidence to suggest that it survived as late as other basal-looped types.

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[25] Gilks, J. A., 'A Note on the Discovery of a Late Middle Bronze Age Spearhead at Brighouse', *The Brigantian*, I (1972), p. 9.

[26] Wray, D. A., Stephens, J. V., Edwards, W. N., and Bromehead, C. E. N., *The Geology of the Country around Huddersfield and Halifax* (1930), p. 6.

[27] Burgess, C. B., 'The Later Bronze Age in the British Isles and North-Western France', *Arch. J.*, CCXV (1968a), pp. 35–6.

[28] Watson, G. G., *Early Man in the Halifax District* (1952), p. 60.

[29] Burgess, C. B., *Bronze Age Metalwork in Northern England* (1968b), Fig. 15. 12.

[30] Coles, J. M., 'A Late Bronze Age find from Pyotdykes, Angus, Scotland', *P.P.S.*, XXX (1964), p. 192, Plate 18.

[31] Burgess (1968b), pp. 19, 22.

[32] Butler, J. J., 'Bronze Age Connections Across the North Sea', *Palaeohistoria*, IX (1963), pp. 98–102, 239.

A CORNELIAN INTAGLIO FROM ALDBOROUGH

By Martin Henig

A large number of engraved signets are recorded as having been found at *Isurium Brigantium* but very few are now extant.[1] The present example is only the fourth that I have been able to examine from the site.[2] (Plate 2).

It is a cornelian, oval in shape with convex upper and flat lower surfaces, measuring some 13 mm. along its long axis, 10.5 mm. across its breadth and with a maximum thickness of *c.* 3 mm. Although it was not found in an archaeological context, the form of the piece is consistent with an early (first or early-second century A.D.) dating. The stone is now in the possession of Mr. A. Foster of Aldborough.

The device as seen in impression is a warrior on horseback riding towards the right. He holds a spear and behind him are two javelins. It would be perfectly easy to describe him as an auxiliary cavalryman, the more so as there must at one time have been an auxiliary fort at Aldborough and throughout the Roman period it occupied an important position on the route to the Northern frontier. Stukeley, Thoresby and Gough record a number of gems depicting subjects of interest to soldiers.[3] It is hard to see what protective (or inspirational) function a 'self-portrait' could have served, so possibly the rider was *interpreted* as some god or hero.

However, despite the fact that horsemen frequently appear as subjects on intaglios, I have not been able to find a close parallel to the Aldborough stone amongst them.[4] The mounted figures shown on the tombstones of auxiliary cavalrymen are certainly much closer to the device on the Aldborough gem.[5] Thus, whatever the ultimate meaning of the signet, it is of immediate interest as a portrayal of a member of the contemporary Roman army.[6]

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[1] Henry Ecroyd Smith, *Reliquiae Isurianae* (London, 1852), pp. 48–9.

[2] A red jasper showing a cock pulling a cart driven by a mouse, *Y.A.J.*, 40 (1959), pp. 45 and 77, Fig. 26, 14; Two nicolos depicting Bonus Eventus one, not published, in the site museum, the other *Y.A.J.*, 43 (1971), pp. 68–9, Plate V and Fig. 20, 1.

[3] Stukeley, *Itin. Curiosum*, II, p. 73 mentions an eagle; Gough, *Camden,* III, p. 59 a victory, an eagle, a 'Roman soldier' (?Mars), and 'Pallas' (Minerva); Thoresby, *Ducatus Leodensis,* p. 107 a victory, Fortuna, etc. The references are collected together by Ecroyd Smith, *op. cit.*

[4] J. W. Brailsford, *Hod Hill*, I (London, 1962), p. 20 and Plate XIVa, M.1 (cornelian from Hod Hill); C. A. Niessen, *Sammlung Niessen. Beschreibung Römischer Altertümer* (Cologne, 1911), No. 5544 (dark paste from Cologne); Nicolo paste, not published from Caerleon, in National Museum of Wales, but this shows a running horse.

[5] *E. Espérandieu, Recueil Général des Bas-Reliefs* . . . ., VII (Paris, 1918), No. 5852 from Zahlbach near Mainz; VIII (Paris, 1922), Nos. 6282, 6283 from Bonn.

J. M. C. Toynbee, *Art in Britain under the Romans* (Oxford, 1964), pp. 191–4 citing stelai from Cirencester, Wroxeter, Ribchester, Chester and Hexham.

[6] I am very grateful to Miss Elizabeth Blank for supplying me with the essential information, casts and photographs necessary to write this note.

THE ROMAN AQUEDUCT AT BOWES, YORKSHIRE, N.R.

BY ROGER TOMLIN

My thanks are due to Stanley Foster for information, to Christine Guy and Michael Huntley for their help in tracing the aqueduct's course, to Jim Styles for printing my photographs, and to John Pell for drawing the map.

Roman forts were sited strategically, often on a low plateau at the junction of valleys, with the result that they were well above the nearest running water. The regular solution was to tap a distant spring or the headwaters of a river, the water being brought down in an open leat that ran a circuitous route along the contours. On Hadrian's Wall, the course of two such aqueducts is marked on the Ordnance Survey map, at Halton Chesters and at Greatchesters, while others may be inferred from inscriptions at South Shields (*RIB* 1060) and Chesters (*RIB* 1463) and from the set of tanks at Benwell. Birdoswald and Chesterholm were supplied by short underground pipe-lines, like the elaborate one at Lincoln and numerous examples in the Rhineland. North of the Wall, surviving tanks and conduits suggest similar systems at High Rochester (where a slab was found 'representing three nymphs at their ablutions'), Birrens, Lyne and Fendoch. South of the Wall, the well-known conduit and fountain at Corbridge mark the outlet of an untraced aqueduct, while Lanchester was supplied by a double-branched aqueduct still visible. There is inscriptional evidence of aqueducts at Chester-le-Street (*RIB* 1049) and Caernarvon (*RIB* 430). Lead water-mains have been found at all three legionary fortresses, and the source of supply for Chester was marked by an altar dedicated to the 'Nymphs and Springs' (*RIB* 460). The recent discovery of a fort at Pumsaint suggests that the complex of aqueducts supplying the nearby gold mines was military work. Similar leats still visible supplied towns like Wroxeter and Dorchester.[1]

The fort at Bowes (*Lavatrae*) was sited on the northern slope of the valley of the R. Greta, with a sharp drop of about 100 ft. to the river. This year (1972) is the 200th anniversary of the discovery of the aqueduct which supplied it. Hutchinson's notice is cited, often without attribution and as if the discovery was 'recent', from the first (anonymous) edition of his *Excursion to the Lakes*. It is interesting to see that after the book was published, Hutchinson tried to trace the aqueduct further.

> On a late inclosure of some common lands belonging to Bowes, an ancient aqueduct was discovered, which conveyed the water the distance of two miles from a place called Levar or Levy-pool, to the castle, sufficient to supply the garrison, and also the baths. (*2nd edition*). This discovery led me, in the succeeding year, to Levar-pool, in hopes that I should find, in that

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[1] HALTON CHESTERS – I. A. Richmond (ed.), J. Collingwood Bruce, *Handbook to the Roman Wall* (1966), pp. 69–70; H. MacLauchlan, *Survey of the Roman Wall* (1857), p. 22.

GREATCHESTERS – I. A. Richmond, *JRS*, 35 (1945), pp. 80–81.

BENWELL – F. G. Simpson & I. A. Richmond, *AA*^{4}, 19 (1941), p. 12 ff.

BIRDOSWALD – E. Birley, *Research on Hadrian's Wall* (1961), p. 200.

CHESTERHOLM – *ibid.*, p. 188, and perhaps STANWIX, *ibid.*, p. 206.

LINCOLN (*colonia*) – F. H. Thompson, *Arch. J.*, 111 (1954), pp. 106–28, with details of pipe-line construction; cf. E. Samesreuther, *Römische Wasserleitungen in den Rheinlanden, BRGK* 26 (1936), pp. 24–157.

HIGH ROCHESTER – J. Collingwood Bruce, *Handbook to the Roman Wall*^{3} (1867), p. 138; *idem*^{2} (1853), p. 301.

BIRRENS – I. A. Richmond, *PSAS*, 72 (1937–1938), pp. 306–9.

LYNE – I. A. Richmond, *PSAS*, 75 (1940–1941), pp. 39–43.

FENDOCH – I. A. Richmond, *PSAS*, 73 (1938–1939), pp. 122–4, 129.

CORBRIDGE – I. A. Richmond & J. P. Gillam, *AA*^{4}, 28 (1950), pp. 158–68.

LANCHESTER – J. Hodgson, *AA*, 1 (1822), pp. 118–21.

PUMSAINT (Dolaucothi) – information from the excavator (1972), J. H. Little; G. D. B. Jones (*et al.*), *BBCS*, 19 (1962), pp. 71–84; *Antiq. J.*, 49 (1969), p. 244 ff.; *Britannia*, 2 (1971), pp. 244–45.

WROXETER – G. Webster & D. Hollingsworth, *T. Shrops. A.S.*, 56 (1957–1960), pp. 133–37.

DORCHESTER – K. M. Richardson, *Antiq. J.*, 20 (1940), p. 435 ff.

> sequestered and little-visited place, some remains of Roman-work not known to antiquaries, and fix the site of the baths of Lavatrae, especially as some adjoining lands bear the name of Lavartree or Laretree; but my expectations were disappointed, nothing but vast works of ancient stone quarries were to be seen; from whence, in all probability, the materials for building the Roman Vallum and the present castle were won.[2]

An altar (*RIB* 730) seen by Camden (1600) recorded the restoration of the baths at the end of the 2nd century, and they were in fact uncovered just south of the fort in *c.* 1820. Evidence of running water within the fort existed in the shape of a 'piece of stone like a conduit stone, and a piece of lead pipe'.[3] The 1966–67 excavations revealed a second bath suite inside the fort, presumably belonging to the commandant's house.[4]

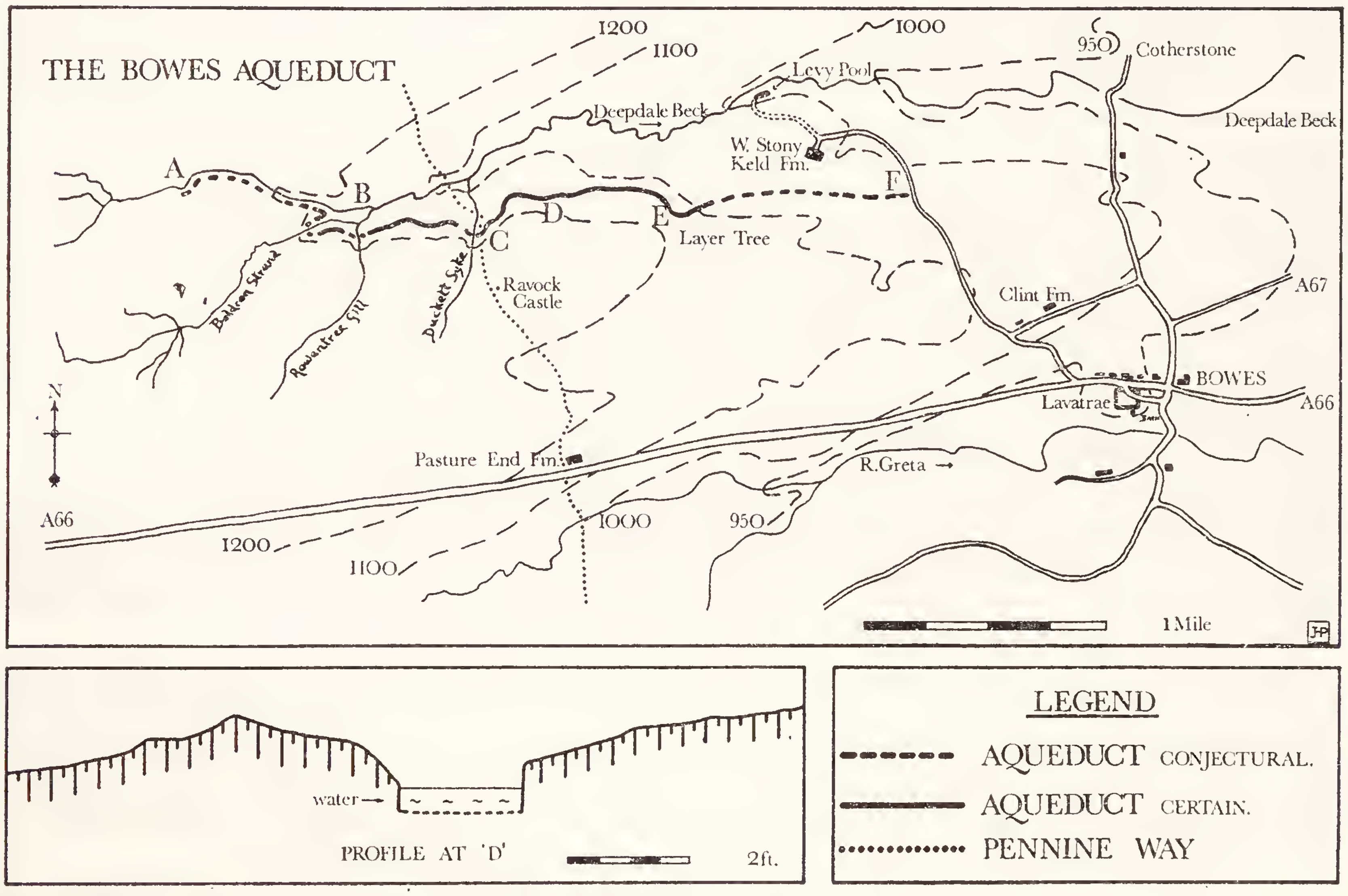

Fig. 5. The Bowes Aqueduct

The enclosure to which Hutchinson refers took place in the 12 months after 29 September 1772, when the commissioners empowered by the Act of 1766 to divide waste land within the Manor of Bowes made their awards.[5] This waste land lay north and north-west of Bowes. The allotments carried with them the usual obligation of ditching and fencing, during which the aqueduct must have been discovered. Hutchinson does not specify what was found, whether a pipe-line or (more probably) the traces of a leat. Nothing seems to have been noted in 1857–61, when the Stockton and Darlington and Lancashire Union Railway was extended from Barnard Castle across Stainmore, and a cutting was made through these fields just north of Bowes. It remains to be seen whether work on the Bowes by-pass, which will follow the same course, reveals anything.

Hutchinson implies that it was more than the coincidence of name which took him to

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[2] W. Hutchinson, *An Excursion To The Lakes In Westmoreland and Cumberland With A Tour Through Part of the Northern Counties in the Years 1773 and 1774* (2nd edition, 1776), p. 5.

[3] H. MacLauchlan, *Arch. J.*, 6 (1849), p. 350 ('about thirty years ago').

[4] *JRS*, 58 (1968), p. 180.

[5] North Riding Deeds Registry (Northallerton), BB, Vol. 24, pp. 71–119.

Levy Pool.[6] He seems to have had some idea of the direction in which the aqueduct ran, but to have miscalculated its rate of fall. His expectations were disappointed, because the aqueduct ran nearly half a mile to the south of Levy Pool, and drew its water from three or four miles further up the Deepdale Beck. This discovery is due to Mr. Stanley Foster who, when herding sheep from West Stony Keld in the 1930's, noticed a drainage channel which ran anomalously along the level. This feature, sometimes actually a channel, sometimes no more than a ledge, can be traced more or less continuously through uncultivated moorland for about two miles (see Map, Fig. 5). It can safely be identified with the Roman aqueduct sought by Hutchinson because the manner of its course and the surviving surface characteristics are just like those of the Greatchesters aqueduct. Both aqueducts are not unlike mine leats of comparatively modern date, which supplied water to power crushing machinery or to wash ore, but they are significantly more weathered than ones I have followed, associated with mines in Cornwall and Radnorshire. Hutchinson's aqueduct was recognized as 'ancient'.[7] This means that in 1772 there was no local memory of any such thing having been dug, nor is there any reason why it should have been. Lead was mined in the Eller Beck valley in the fells south of Bowes, but water power was immediately available, and Bowes itself was never a mining centre. Ample water power, if needed, was available from the River Greta, as a well-preserved mill race bears witness. The Bowes aqueduct should be counted among those of Roman date.

The aqueduct's beginning has been eroded by the Deepdale Beck, but a likely point is at *A* (see Map, Fig. 5), where the water falls over a shelf of rock into a pool used for sheep-dipping in modern times. A low dam only 20 ft. wide would have blocked the outlet from the catchment area of the Deepdale Beck. The aqueduct may first be seen (*Pl.* 3) as a straight channel about 1 ft. wide and deep, still wet and mossy, on the steep southern valley-slope of the marshy floor over which the Deepdale Beck meanders, west of a prominent sheep-fold (*B*). After a short break, the aqueduct rounds the headland between the Deepdale Beck and Boldron Strand about 40 yds. short of the sheep-fold, and continues westward up the deep valley re-entrant until lost in erosion. It reappears on the south bank of Boldron Strand, and follows the contour (c. 1175 ft.) as far as the re-entrant of Rowantree Gill, where it is again lost by erosion. From its reappearance on the east bank of Rowantree Gill, it may be followed (with a few gaps due to erosion or to patches of swamp) almost to the beginning of enclosure and cultivation at West Stony Keld (c. 1075 ft.). This fall of about 100 ft. in roughly two miles accords with the result from levelling at *E*, where the fall was 9.15 ft. in 1267 ft. (1 : 138½).

East of Rowantree Gill, the aqueduct appears as a shallow depression (almost a 'parting') between the heather roots, and sometimes as a wet and mossy channel about 1 ft. wide and deep. As its course diverges from that of the Deepdale Beck, the ground gets drier as it approaches Ravock Castle (actually the ruins of a shepherd's hut or shooting box), and there are traces of an embankment on its downhill side. As it reaches the *gutter* of Duckett Sike, it characteristically turns southward to hold its level, and reappears on the eastern side as a prominent series of tight loops along the contour, carrying water and marked by a line of reeds. The Pennine Way crosses it here, just north of a T-shaped sheep-fold (*C*).

The next quarter mile is the best-preserved in the whole course. The aqueduct runs in a great curve along the contour as a wet, reed-grown channel, about 2 ft. wide, with a prominent embankment on its downhill side (*profile,* Fig. 5). As it comes to the escarpment (*D*) (*Pl.* 4), it is joined from the uphill side by another water-course

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[6] This now-derelict farm and the place-name Layer Tree just south of it preserve the Romano-British name for Bowes. (For its British root, see K. Jackson, *Britannia,* 1 (1970), p. 75). Camden, who identified it from the Antonine Itinerary, heard of a nearby stream called *Lauer* (Laver?), *Britannia* (1607), p. 594. This was already unidentifiable by the time of Horsley's visit (*Britannia Romana* (1732), p. 411).

[7] The Lincoln pipe-line was observed as early as 1700 (see n. 2). A closer parallel with the discovery of the Bowes aqueduct is Lingard's recognition in 1807 of that at Greatchesters as 'a winding aqueduct still visible' (printed by R. C. Bosanquet, *AA*^{4}, 6 (1929), p. 155).

(usually dry), which runs along the foot of the escarpment. It too has been embanked on its downhill side. It has captured the aqueduct, and their combined waters now drain into the valley below, through a breach in the aqueduct's bank. The aqueduct channel continues, however, along the escarpment-face as a level terrace about 2 ft. wide, which is clearly visible from a distance in slanting sunlight. After the escarpment ends (*E*), the aqueduct may be traced through heather and coarse grass across the slopes south of Levy Pool, but its course becomes increasingly obscure as it approaches the enclosure-wall of West Stony Keld. The ground has been disturbed, apparently by military vehicles, one of which is still rusting *in situ*. No trace is left in the fields round West Stony Keld, except for a faint terrace (*F*) below the Air Ministry ruins, where Mr. Foster remembers it before the land was requisitioned.

East of the road from Bowes to West Stony Keld, all trace seems to have been lost in two centuries' grazing and cultivation, but something might be recovered by careful field work or aerial photography. The Roman fort lies on a contour peninsula bounded by the 950 ft. line, which gives the aqueduct about another 100 ft. to fall. This suggests it had about two miles more to run. The lie of the land demands a wide loop with its apex beyond the Bowes–Cotherstone road, and back across the fields where it was reported by Hutchinson, to turn southward across the contour isthmus and into the fort.

In uncultivated moorland, if there has been no soil movement or erosion, the Bowes aqueduct is striking evidence of the Roman military surveyor's economy and skill. Its finest stretch is easily accessible by the Pennine Way, a mile north of where the Way crosses the A66, west of Pasture End Farm. Similar aqueducts may await recognition in the moorland above other Roman forts.

NEW PARK, HUBY,—AN EARLY 17TH CENTURY HUNTING LODGE

By C. G. Gilbert

The well-timbered countryside north of York, studded with stately homes and picturesque Georgian villages, contains a sprinkling of modest, usually isolated, farmsteads dating from before the Civil War when the region was a vast royal hunting reserve known as the Forest of Galtres.[1] Certain of these buildings were originally laund houses or hunting lodges. One of these is New Park in the parish of Huby, a farmhouse containing vestiges of sumptuous Jacobean decoration, where James I is reputed to have stayed.

The 1649 survey of the North Riding Crown estates records two buildings at New Park: the Great Lodge, 'lately well repayred and made fitt and conveniente for habitation' and the Little Lodge, described as 'very commodious for a Servante'.[2] The smaller lodge has disappeared, but a connection with Sir Arthur Ingram has led to the recovery of interesting data about the origins and building history of the larger, mainly intact, residence.

Sir Arthur, a man of humble origins who rose to become one of the wealthiest and most powerful men in Yorkshire, habitually sought to bolster his position by acquiring land in the neighbourhood of York, but encroachments upon the Forest of Galtres, apart from tofts and crofts, were forbidden without a special licence from the King. However, Ingram held the posts of Steward and Master of the Game in the Forest of Galtres and in 1629 he obtained permission to enclose part of the forest bordering on one of his manors at Huntington and the following year persuaded the Court of Exchequer to disafforest the whole area. The woodland was then estimated at 7600 acres and the process was carried out by 1635, against the active opposition of many townships. The deer were thereafter confined within parks, such as New Park, while the rest of the forest was carved up for arable development.[3] The decision to thus disafforest Galtres led to the long process of drainage, tree felling and enclosure which gradually transformed the region from marshy woods and thickets to prosperous agricultural land.[4]

The newly-created hunting reserve known as 'New Park' was almost 1000 acres[5] in extent and one of the noblest deer parks in Yorkshire. The Earl of Strafford, who had been created Lord President of the Council of the North in 1628, assiduously sought to gain possession of it. In May 1633 he wrote to the Earl of Carlisle

> 'I have been a Suitor to the King that he would accommodate his President of York with a Park lately inclosed forth of the Forest of Galtres. It will but cost him two thousand pounds. His Majesty proposeth now, during his Stay at York, to go and see it, I beseech you put him in mind to do so; and when you are upon the Place, and see the Conveniency of it, afford our Suit one good Word'.[6]

Strafford's diplomacy was successful, for a few days later the King rode over to view the New Park and shortly afterwards granted it to his Lord Deputy. This confirms the persistent tradition that royalty was entertained at New Park, although James I may have become confused with his son Charles, no doubt owing to the former's well-known passion for hunting.

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[1] The fullest available description of this region is to be found in: G. C. Cowling, *The History of Easingwold and the Forest of Galtres* (1967).

[2] T. S. Willan, 'The Parliamentary Surveys for the North Riding of Yorkshire', *Y.A.J.*, XXXI (1932–1934); the section on New Park, pp. 266–7.

[3] A. F. Upton, *Sir Arthur Ingram* (1961), pp. 196–8.

[4] Camden described this tract of land as 'in some places thick and shady, with spreading trees, but in others is flat, wet and boggy'. Quoted *V.C.H.: York North Riding*, II (1923), p. 196.

[5] 'Parliamentary Surveys', p. 267.

[6] Sir George Radcliffe (ed.), *The Earl of Strafford's Letters and Dispatches,* Vol. I (1739), p. 86.

Strafford was constantly busy in the King's service and seldom resided in Yorkshire, therefore the park must have served him primarily as an enviable status symbol.[7] Little is known about his tenure apart from reports of a violent quarrel with a neighbouring landowner Sir John Bourchier of Beningbrough Hall, who claimed that part of his estate had been wrongfully enclosed.[8] A letter, written in November 1635, shows Strafford issuing instructions to a servant to: 'view the New Park at York, cause the Deer to be numbered and now and then look into the house to see it be kept from decay'.[9] The Vice-President was given permission to graze 20 horses in the park. It may be inferred that he either built a lodge for himself or renovated an existing one. Strafford presumably held the property until his impeachment in 1640 or his execution for treason the following year.

Documents preserved amongst the Ingram family papers at Leeds City Archives Department show that after Strafford's death a relative, Thomas, 1st Viscount Savile, was given custody of the New Park and leased it to Sir Arthur Ingram from May 1641 for £100 a year.[10] In August Sir Arthur entertained Lord and Lady Holland there and about the same time he started to enlarge and improve the accommodation.

The extensive alterations made between September 1641 and July 1642 are all carefully recorded in the account books and correspondence of Ingram's Steward, John Mattison, who sent regular progress reports to his master in London. The work was carried out by the usual combination of master mason and master carpenter, with the aid of journeymen and craftsmen in minor trades. Nearly all the skilled men had previously been employed by Sir Arthur elsewhere in Yorkshire.[11]

Building activity was evidently in full swing by November when Mattison reported that there were, besides the masters, five 'troulers' (bricklayers) and four joiners at work. He wrote 'I perceive by tomorrow night all the brickwork will be done within a yard round of the top, all but the chimneys, and most of the second floor is up'.[12] Progress was rapid: Butler, who kept '7 or 8 men at work continually'[13] constructed the timber roof-frame while labourers were occupied levelling the garden[14] and other workmen were laying flags, digging a cellar, stair-making, plastering, burning bricks, sinking a wall and so forth. However, what William Butler, the master carpenter, referred to as 'the late disaster of the chimneys (which God knows was no fault of mine)'[15] caused an unexpected set-back. John Munckman, the master responsible, wrote an apologetic letter to Sir Arthur in which he blamed first of all another contractor and then the weather

> '. . . . myself, trusting to that foundation of his, wrought up our work staunch and firm and had brought up the two back chimneys to the height of the upper chamber. But now, please your worship, I with the rest make bold to certify you (for which we are heartily sorry) that those two chimneys on Wednesday night last, what in respect of the foundation and the much rain that hath fallen of late, fell down to the ground betwixt 12 and 1 of the night'.[16]

It may be imagined that Sir Arthur Ingram was profoundly displeased but Mattison did his best to soften the blow by writing reassuringly that he had 'spoken to Butler who saith he can set on his roof not withstanding the breach. He is in hand with laying the floors and after will go on with the stairs'.[17]

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[7] T. D. Whitaker records in his *Life of Sir George Radcliffe* that Strafford 'enclosed a noble park forth the neighbouring Forest of Galtres and kept an open house at his own expense for suitors of rank and quality'.

[8] *Strafford's Letters*, pp. 86 and 88, also the Pawson transcripts of the Temple Newsam papers (acc. 1038), in the Leeds City Archives Dept.: Supplementary Sheets 20 May 1633, etc.

[9] *Strafford's Letters,* 27 November 1635, pp. 480–88.

[10] Acc. 1038, Receipts (hereafter R) 8 July 1641: 'Rec'd. of Sir Arthur Ingram £100 for one years rent for the herbage of a Park near the City of York called New Park for the year ending 1 May 1642 (signed) Savile'. Also *Dictionary of National Biography,* Vol. 50 (1897), p. 375.

[11] At Temple Newsam House, Sheriff Hutton Park and The Archbishop's Palace, York.

[12] Acc. 1038, Letter Book (hereafter L) 12 November 1641.

[13] L. 10 December 1641.

[14] Two interesting reports from Jo. Higgins the gardener to Sir Arthur survive L. 1 and 25 December 1641.

[15] L. 24 December 1641.

[16] *Ibid.*

An unsigned note dated 11 February 1642, also mentions Butler's work in connection with the staircase:

> 'For the stairs, the posts are all ready cut, the bannisters in hand and the frame ready to put together. Ventris and his man began last Monday about the first door at the stairhead'.[18]

The staircase was an important feature owing to the principal reception rooms being on the first floor. It is very handsome, having square enriched newels surmounted by vases and a well-moulded handrail resting on turned balusters. The adze marks give it a pleasantly rustic character altogether typical of provincial craftsmanship.

The door, mentioned as being 'at the stairhead', is another impressive feature. It is the last recorded work of Thomas Ventris, Senr., carver in wood and stone who did a great deal of work at Sir Arthur's other country houses, such as embellishing chimney-pieces and making garden ornaments in the form of heraldic beasts.[19] His doorway at New Park is formed of male and female pilasters profusely decorated with low-relief ornament and surmounted by a vigorous strapwork composition, a basket of flowers and a cock proper, the Ingram family crest.[20] The heraldic device serves as a small memorial to the man who shaped the present building. The staircase and doorstead are admirably portrayed in a drawing by the Rev. Samuel Jones Allen, dated 12 October 1850.[21]

Ventris was also responsible for executing the 'fretwork' (moulded plasterwork) at New Park, one original ceiling, decorated with a typically Jacobean diamond-shaped panel and armorial ornaments, has survived upstairs and there are several enriched friezes elsewhere in the house. The walls were mostly panelled or covered with textiles. There is a measured plan of the Great Chamber drawn by Mattison to guide Sir Arthur when ordering hangings in London.[22] An elderly servant Arthur Cady was set to embroider seat furniture for the new rooms and Mattison from time to time commented indulgently on his progress: 'Arthur is still going on slowly with stools and chairs, being he was never one of the speediest workmen and the weather being cold'[23] and later, 'Arthur goes on something speedier now, the days beginning to mend'.[24] The interior of the lodge was evidently nearing completion by May 1642 when a final payment was made to Ventris 'to end all the fretwork at New Park'.

The external countenance of the building is still probably much the same as in Sir Arthur Ingram's day, despite a remodelling of the canted bay windows to produce a straight external facade with Georgian-type fenestration. The front elevation has a projecting porch with a sundial[25] which conceals the entrance to a dove cote in the gable-end. At the back the attics are fronted by three more gables and there is a massive chimney-stack rising in three diminishing stages. The central feature of a picturesque skyline is another chimney surmounted by four linked shafts with corbelled-out caps set anglewise to the stack. Its well-judged proportions give the house a modest dignity.

All the bricks were produced locally by Walter Armstrong at a cost of nine shillings a thousand.[26] The plain tiles on the front half of the roof were also made by him, but these have been replaced elsewhere by pantiles.

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[17] L. 14 January 1642.

[18] R. 11 February 1642.

[19] For an account of his work see C. G. Gilbert, 'Newly-Discovered Carvings by Thomas Ventris of York', *The Connoisseur* (August, 1966), pp. 257–9.

[20] *Ibid.*, reproduced, p. 259.

[21] I am indebted to Mr. G. Cowling for drawing my attention to this sketch which is owned by the Rev. R. S. Hawkins.

[22] L. 7 January 1642. It measured 23 x 19 ft. (the plan is preserved with the Temple Newsam papers).

[23] L. 24 December 1641.

[24] L. 14 January 1642.

[25] The sundial bears the following verse: 'Hours fly, flowers die, / New days, new ways, / Pass by, love stays'.

Windows always play a vital part in articulating the architectural character of a building. At New Park the original bays 'jutting out on the south of the house' have been replaced by typically north-country sideways-sliding sashes. The modified fenestration doubtless gave the building a more up-to-date appearance, but the unpopular window tax, first levied in 1696 and increased many times before its ultimate abolition in 1851, is doubtless responsible for the many blocked openings which impair the once-symmetrical design. However, the building still conveys an uncommonly interesting impression of the size and standard of comfort required of a hunting lodge in the reign of Charles I, its long status as a farmhouse having fortunately given it a large measure of immunity from 'architectural' improvements.

After a short illness Sir Arthur Ingram died at his house in London in August 1642, just two months after the completion of the Lodge. His son apparently decided to give up the lease, for the last mention of the place in Mattinson's account book is an entry dated 28 September 1642 for: 'carrying all the goods from New Park to my master at Temple Newsam'.

The New Park, being Crown property was confiscated by Cromwell after the execution of Charles I and a survey was authorised with a view to sale. The Surveyors reported that Sir Hugh Cholmley was tenant of the park which contained 270 fallow deer valued at £180 and various sorts of timber worth £2,410. The Great Lodge was described as having

> 'Severall large and handsomme Roomes viz. a hall a parlour, a Kitchinge, a buttery, a seller and other necessary lower rooms; six faire lodginge chambers above the stairs with loftes over the same and the usual garden, barns, stables, etc.',

assessed at £20 a year.[27]

During the Commonwealth the lodge, together with 600 acres of herbage passed to the prominent Roundhead Colonel Lilburne; then at the Restoration it changed hands yet again being granted by the King to the Royalist captain Richard Harland of Sutton Hall for his brave services at Marston Moor. He, being unable to maintain two households, leased the property to Sir Henry Darcy for a period of 41 years and granted the reversion of the estate to George, Duke of Albermarle.[28] It has not been possible to establish the sequence of ownership in the 18th century, but it was doubtless during this period that the adjacent cluster of outhouses and farm buildings grew up and awareness of its past status as a Hunting Lodge with royal connections became a folk memory.[29]

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[26] Acc. 1038, Accounts, 29 October 1641.

[27] 'Parliamentary Survey', pp. 266–7.

[28] *V.C.H.: York North Riding* (1923), pp. 197–8.

[29] I am indebted to Mr. G. C. Cowling for reading and commenting on the text of this article.

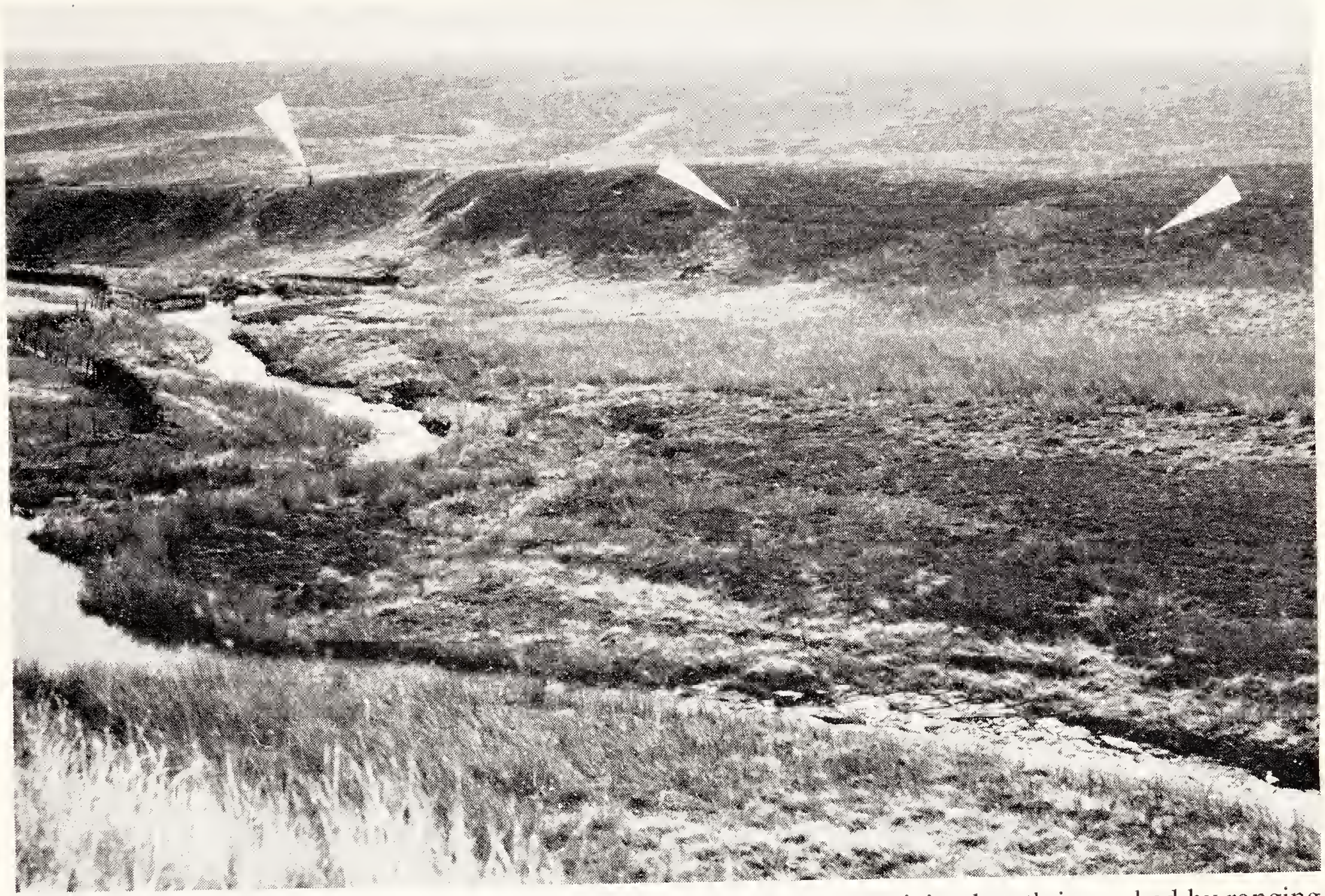

PLATE 3. *The Bowes aqueduct* at *B,* from the north-west. The first surviving length is marked by ranging poles (between white arrows). The figure (also arrowed) stands west of the sheep fold, where the aqueduct rounds the headland. [TOMLIN: BOWES AQUEDUCT, pp. 181-4].

PLATE 4. *The Bowes aqueduct* at *D,* from the south-east, as a reed-grown channel in coarse grass and heather. The profile (see Fig. 5) was measured at this point. [TOMLIN: BOWES AQUEDUCT, pp. 181-4].

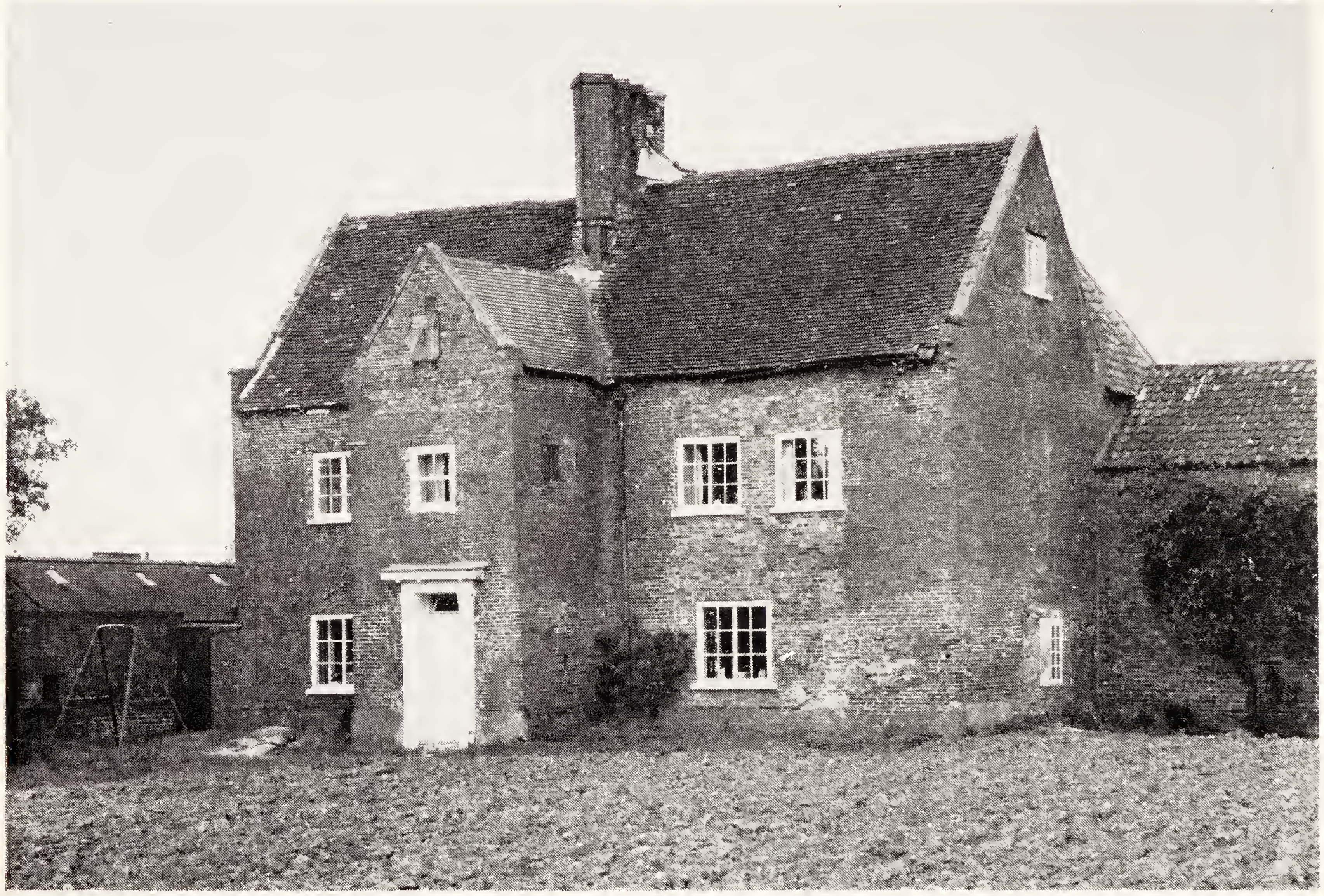

PLATE 5. New Park Farmhouse, *c.* 1642. (*Photo: National Monuments Record*).
[GILBERT: NEW PARK, pp. 185-8].

CLAY TOBACCO PIPE MAKERS IN WEST YORKSHIRE

By Simon Lawrence

Introduction by Lawrence Butler

This list of names is an addition to the list of names of tobacco-pipe makers published by Adrian Oswald in 1960.[1] To the 96 names given by Oswald in West Yorkshire a further 216 entries are now added. The main additions are within the industrial towns of Halifax, Leeds and Sheffield, especially during the 19th century. Some of the lesser towns, such as Batley and Keighley, now have pipe-makers recorded.

In the period 1600–1650 pipe-making centres were established principally in London and Bristol, but the names of makers are known from Hull[2] and it is clear from excavated material at Sandal Castle and Potovens that the Gill family and their competitors had already started work near Wakefield by about 1640.[3] In the second half of the 17th century Hull and York became the main northern centres,[4] but in the West Riding pipe-makers are recorded from Halifax and Wakefield and some of their products can be identified with certainty. During the early 18th century most market towns supported pipe-makers and the more plentiful survival of records enables a preliminary assessment of their numbers to be made. York and Hull supported at least 10 makers throughout the early 18th century, while Halifax, Leeds and Rotherham had two or three. The specialist skills of the pipe-maker often made this a family concern handed down over three and four generations: in Hull it was the Asquiths, Burrills, Goldwells, Normans, Tarbotons and Westerdales, in York the Holmes, Masons and Shaftoes, in Wakefield the Powells and the Gills, and in Halifax the Rotheras and, later, the Hutchinsons. This characteristic of family descent and close inter-relationship continues into the 19th century with the Biltons in Leeds, the Dodgsons in Batley and the Fordham family in Pontefract.

After a temporary decline in the habit of smoking in the middle of the 18th century, the great industrial expansion brought an increase and in 1775–1800 the number of pipe-makers recorded grew. Often the kilns were located in the same areas as pottery kilns which needed similar natural resources; this is the case at Potovens, near Wakefield and Bate Hayne, near Halifax, and is possibly the case at Rawmarsh (with the Scorahs) and at Ripon (with the Halls). The early 19th century saw a dramatic expansion in the number of pipe-makers working in Leeds, and a less marked growth in Sheffield (8–10 makers) and in Bradford (6 makers). A more modest growth occurs in the established centres of Halifax and Wakefield. Possibly the rise is somewhat exaggerated due to the virtual absence of earlier records, and it is clear from excavated material that other pipe-makers were working in the smaller towns earlier than the first recorded names. The minor river ports, Selby, Goole and Knottingley, each supported a pipe-maker during this century, and in the West Riding textile towns makers are recorded for the first time.

The publication of this list may be seen as a first step to further documentary research and to the co-ordination of pipe-makers' names with their products in this area.

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[1] A. Oswald, 'The Archaeology and Economic History of English Clay Tobacco Pipes', *Journal of the British Archaeological Association*, XXIII (1960), pp. 40–102. There are also 75 names given for Hull and 2 for Beverley.

[2] T. Shephard, 'Early Hull tobacco pipes and their makers', *Hull Museum Pub.*, VI (March, 1962).

[3] P. Brears, 'Excavations at Potovens, near Wakefield', *Post-Medieval Archaeology,* I (1967), pp. 13, 40–2; and *Post-Medieval Archaeology*, V (1971), pp. 31, 33.

[4] Victoria County History, *The City of York* (1961), p. 199: the first tobacco shop was licensed in 1632. For pipes, see *Y.A.J.*, 40 (1962), pp. 378–81.

SOURCES FOR LIST OF NAMES AND DATES

Personal communications from:

Brears – P. C. D. Brears, Clarke Hall Museum, Wakefield.
Goodchild – J. F. Goodchild, Cusworth Hall Museum, Doncaster
Holmes – D. Holmes, Pontefract
Oswald – Adrian Oswald, Ringwood, Hants.

All other information found by the writer from:

Guest's *History of Rotherham*
Land Tax Returns – Rate Assessments, County Hall, Wakefield
Leeds Mercury
Quarter Sess. – West Riding Quarter Sessions Rolls, County Hall, Wakefield
Rockingham Bills – Marquess of Rockingham estate papers, Sheffield Archives Dept.
W.R.R.D. – West Riding Registry of Deeds, Wakefield
Various Street Directories – e.g. Baines, Baines & Newsome, Kelly, Leeds Borough Directory, Parsons & White, Pigot, Slater, White.

Initial	*Surname*	*Christian Name*	*Date*	*Place*	*Source*
CA	Allan	Charles	1817	Leeds	Baines
CA	Allen	Charles	1847–84	Pontefract	*Inf.* Holmes
EA	Allen	Elizabeth	1887	Pontefract	Slater
HA	Allen	Henry	1876	Sheffield	Sheffield Trade Dir.
IA	Allan	James	1817–28	Leeds	Baines, Parsons & White
IA	Atkinson	Jonathan	1838	York	*Inf.* Oswald
IA	Allen	James	1847–84	Pontefract	*Inf.* Holmes; White, Kelly
RA	Ashrey (*Arcy*)	Reuben	1823	York	*Inf.* Oswald
WA	Armitage	William	1680–1	Wakefield	*Inf.* Oswald
WA	Akroyd	William	1842–66	Halifax	White
WA	Aldridge (*Oldridge*)	William	1846	York	*Inf.* Oswald
DB	Bleasby	Daniel	1838–42	Bradford	*Inf.* Oswald; White
GB	Barrick	George	1837–56	Sheffield	*Inf.* Oswald; White
HB	Byram	Henry	*c.* 1670 & 1709	Wrenthorpe (Wakefield)	*Inf.* Brears, Oswald
HB	Bandmacher	Henry	1892–3	Bradford	Kelly
IB	Buckley	John	1822–3	Halifax	Baines
IB	Buckley	John	1828–30	Huddersfield	*Inf.* Oswald; Parsons
IB	Bilton	James	1834–45	Leeds	White, W.R.R.D.
IB	Balme	James	1842–53	Halifax	White
IB	Bradley	John	1842–66	Leeds	White
IB	Buckley	James	1887	Barnsley	Slater
RB	Bilton	Richard	1817	Leeds	Baines
RB	Bilton	Robert	1817–38	Leeds	Baines, Parsons, White
RB	Bilton	Ruth	1842	Leeds	White
SB	Bickerdike	Simon	1798–1808	Leeds	*Inf.* Oswald; Leeds. Dir.
	Bleasby & Hey		1828	Bradford	Parsons & White
	Bilton		1884	Leeds	W.R.R.D.
CC	Connel (*Connell, Charles*)	C	1826, 1867	Selby	*Inf.* Oswald; White
CC	Cartwright	Charles	1841	Sheffield	Sheffield Dir.
FC	Cartwright	Frederick	1854–60	Sheffield	*Inf.* Oswald; Kelly
HC	Cartwright	Hannah	1856	Sheffield	*Inf.* Oswald
IC	Clark	John	1828–48	Bradford	*Inf.* Oswald; Parsons
IC	Connel	Joseph	1853	Leeds	White
IC	Collins	John	1854–87	Sheffield	Kelly, White, Slater
RC	Cliffe	Robert	1680	Potovens	*Inf.* Oswald
SC	Cheetham	Stephen	1845–53	Leeds	W.R.R.D., White
WC	Carr	William	1853–61	Leeds	*Inf.* Oswald; White
WC	Cooke	W. J. & Co.	1893–1900	York	*Inf.* Oswald
CD	Davis	Charles	1887	Bradford	White
HD	Dobbs	Henry	1886–93	Keighley	*Inf.* Oswald; White, Kelly
ID	Denton	Joshua	1822–3	Bradford	*Inf.* Oswald; Baines
ID	Dodson	John	1829–93	Batley	W.R.R.D., Kelly, Slater
ID	Dodson	Joseph	1830–93	Batley	*Inf.* Oswald; W.R.R.D., Kelly
ID	Dee	Joseph	1833–41	Sheffield	*Inf.* Oswald; White, Pigot

Initial	*Surname*	*Christian Name*	*Date*	*Place*	*Source*
ID	Dodgshun	Joshua	1834	Batley	Baines & Newsome
ID	Dodgson	Isaac	1838	Batley	*Inf.* Oswald
ID	Dodson	John & Wm.	1853–59	Batley	White, W.R.R.D.
WD	Dee	William	1833	Sheffield	*Inf.* Oswald
WD	Dodson	Wm.	1855–87	Batley	W.R.R.D., Kelly, Slater
WD	Dodson	Wm. (younger)	1855–87	Batley	W.R.R.D., Slater
GE	Elliot	George	1876	Sheffield	Sheffield Trade Dir.
JE	Erratt	James	1864	Sheffield	*Inf.* Oswald
WE	Elliot	William	1839	Sheffield	*Inf.* Oswald
WE	Emsley	William	1853	Leeds	White
WE	Erratt	William	1854–64	Sheffield	*Inf.* Oswald; Kelly
WE	Erratt	William & Co.	1856	Sheffield	*Inf.* Oswald
WE	Eastwood	Wm.	1857–93	Halifax	White, Kelly
	Elliot	Mrs.	1867	Sheffield	Kelly
EF	Fran	Elizabeth	1860	Sheffield	*Inf.* Oswald
FF	Fishburn	Francis	1853	Leeds	White
GF	Fordham	George	1851–1908	Pontefract	*Inf.* Holmes, Oswald; W.R.R.D., Kelly, White
HF	Fordham	H	*c.* 1820(?)	Pontefract	*Inf.* Goodchild
IF	Fagan (*Feegan*)	John	1817–53	Leeds	*Inf.* Oswald; Baines, Parsons & White, Newsome
IF	Fordham	John	1898	Pontefract	W.R.R.D.
MF	Fagan	Mary	1834–8	Leeds	*Inf.* Oswald; Baines, White
WF	Fletcher	William	1817–38	Leeds	*Inf.* Oswald; Baines, Parsons & White
WF	Finch	William	1848	Rawmarsh	*Inf.* Oswald
AG	Gillatt	Ann	1830	Sheffield	Pigot
CG	Gott	Christopher	1848	Barnsley	*Inf.* Oswald
GG	Gill	George	1687	Halifax	*Inf.* Oswald
IG	Gill	John	1673	Halifax	*Inf.* Oswald
IG	Gill	Judith	1692–3	Wakefield	*Manor Book*
IG	Gill	John	1709–17	Wakefield	*Inf.* Brears
IG	Gill	Joseph & James	1828–42	Wakefield	Parsons & White
MG	Gill	Mary	1822–53	Wakefield	Baines, White
TG	Gill	Thomas	1773–87	Wakefield	W.R. Quarter Sess.; W.R. Land Tax Ret.
AH	Hodgson	A. & R.	1834–7	Leeds	Leeds Borough Dir., White
AH	Hodgson	Alice	1842	Leeds	White
AH	Harper	Ann (Mrs.)	1892–3	Leeds	Kelly
BH	Hodgson	Benjamin	1838	Doncaster	*Inf.* Oswald
CH	Holmes	Christopher	1732–41	York	*Inf.* Oswald
CH	Hutchinson	Charles	1822–67	Halifax	Kelly, White, Baines
CH	Hunter	Charles	1828	Halifax	Parsons & White
CH	Hutchinson	C	1867	Halifax	Kelly
DH	Hutchinson	Dorothy	1842–53	Halifax	White
EH	Hunter	E. & Son	1826–8	Leeds	Parsons & White
EH	Hodgson	Enos	1853	Leeds	White
HH	Hughes	Henry	1867	Wakefield	Kelly
IH	Henfroy	John	1704	Rotherham	*Inf.* Oswald
IH	Hayes	John	1798–1835	Leeds	Leeds Dir., Baines, Poll Book
IH	Hayes	John (Senior)	1817	Leeds	Baines
IH	Hayes	John	1823–44	Pontefract	*Inf.* Holmes; Baines
IH	Hay	James	1838	Bradford	*Inf.* Oswald
IH	Hutchinson	John	1838	Keighley	*Inf.* Oswald
IH	Hammond	John	1853	Leeds	White
IH	Hutchinson	James	1853–67	Halifax	White, Kelly
IH	Hirst	Joseph	1855–71	Batley	W.R.R.D.
IH	Hall	James	1867–93	Ripon	White, Kelly
IH	Hutchinson	Joseph	1887	Halifax	White
PH	Hullan	Philip	1876	Rotherham	Trade Dir.
RH	Hodgson	R (see A. & R.)	1834–7	Leeds	Leeds Borough Dir., White
RH	Hutchinson	Robert	1848	Halifax	*Inf.* Oswald

Initial	*Surname*	*Christian Name*	*Date*	*Place*	*Source*
SH	Hillary	S	*c.* 1740(?)	Pontefract	marked pipe-stems found at Horsefair, Pontefract
SH	Halstead	Samuel	1853	Leeds	White
TH	Homes	Thomas	1657	York	*Inf.* Oswald
TH	Hutchinson	Thomas	1822–67	Halifax	Baines, Parsons & White
TH	Hill	Thomas	1822–37	Sheffield	*Inf.* Oswald; Baines, Pigot
TH	Harper	Thomas	1861	Leeds	*Inf.* Oswald
WH	Hutchinson	William	1822–3	Halifax	Baines
WH	Hodgson	William	1838	Doncaster	*Inf.* Oswald
	Hill & Borwick		1833	Sheffield	*Inf.* Oswald; White
DI	Ingham	David	1837–8	Knottingley	White
HJ	Jones	Henry	1854	Sheffield	Kelly
IJ	Jenkinson	John	1842	Bradford	White
IJ	Jolly	Joshua	1842	Bradford	White
IJ	Judge	John	1851	York	*Inf.* Oswald
	Jolly & Roe		1823–8	Bradford	Baines, Parsons
RK	Kilham	Robert Percy	1876–81	Sheffield	Slater, Kelly
SK	Kitson	Samuel	1842–53	Bradford	White
	Kilham & Co.		1891	Sheffield	White
GL	Littlewood	George	1853	Leeds	White
IL	Lees	James	1867–93	Goole	Kelly
ML	Lonsdale	Manaseh	1828–42	Leeds	Parsons, White
TL	Lee	Thomas	1853–67	Exley (Halifax)	White, Kelly
WL	Lee	William	1680	Rotherham	*Inf.* Oswald
IM	Mitchell	John	1781	Halifax	Wakefield Quarter Sess.
IM	Mitchell	James	1782	Rotherham	Rotherham Quarter Sess.
IM	Mansell	Joseph	1854	Rotherham	Kelly
IM	Moore	John	1866	Leeds	White
GN	Nelson	George	1835–53	Leeds	Poll Books, White
HN	Nichols	Henry	1853–70	Wakefield	White
EO	O'Neil	Edward	1867	Rotherham	Kelly
IO	Ogden	John	1837–53	Leeds	White
MO	Ogden	Mary	1842	Leeds	White
CP	Peers	Charles	1818–78	York	*Inf.* Oswald
IP	Petty	Joseph	1844–7	Pontefract	*Inf.* Holmes
IP	Pearson	Joseph	1853	Leeds	White
IP	Peart	Joseph	1876	Sheffield	*Inf.* Oswald
IP	Peart	Josiah	1876–81	Rotherham	Trade Dir., Kelly
MP	Powell	Mathew	1690	Wakefield	*Inf.* Brears
RP	Peart	Robert	1842	Leeds	White
TP	Pashley	Thomas	1787	Tinsley	Doncaster Quarter Sess.
TP	Pinder	Thomas	1825–9	Sheffield	*Inf.* Oswald
TP	Penn	Thomas	1853–93	Leeds	White, Kelly, W.R.R.D.
WP	Peart	William	1862–7	Rotherham	Rotherham Dir., Kelly
CR	Rothera	Charles	1866–7	Halifax	White, Kelly
CR	Rothenburg	Charles	1876	Rotherham	Trade Dir.
IR	Rothera	John	1781	Halifax	Wakefield Quarter Sess.
IR	Rothery	James	1842–93	Halifax	White, Kelly
SR	Roe (*or* Wroe)	Sarah	1842	Bradford	White
TR	Rhodes	Thomas	1754	Brightside Brierlow	Sheffield Quarter Sess.
WR	Roe	William	1838	Bradford	*Inf.* Oswald
BS	Saville	B	1838	Batley	*Inf.* Oswald
BS	Saville	Mr. B & Wm. Shaw	1838	Batley	White
BS	Shaw	B & J	1867	Batley	Kelly
BS	Shaw	Benjamin	1887	Bradford	White
CS	Spurr	Charles	1828–64	Sheffield	*Inf.* Oswald; Pigot, White, Kelly
DS	Simmons	David	1817–37	Leeds	Baines, Newsome, Parsons, White

Initial	*Surname*	*Christian Name*	*Date*	*Place*	*Source*
ES	Sedgewick	Edward	1810–28	Leeds	*Leeds Mercury,* Parsons, White
ES	Sedgewick	Edward	1864	Sheffield	*Inf.* Oswald
FS	Scholes	Francis	1881	Leeds	Kelly
FS	Strong	Fred.	1893	Leeds	Kelly
HS	Stubbs	Henry	1822	Leeds	Baines
HS	Shaftoe	Hannah	1823–38	York	*Inf.* Oswald; White
HS	Shaftoe	Henry	1851–72	York	*Inf.* Oswald
IS	Scorah	Jonathan	1767–1821	Rawmarsh	Rockingham bills, W.R.R.D., Doncaster Quarter Sess.
IS	Sleigh	James	1822	Leeds	Baines
IS	Sharrat	J	1838	Doncaster	*Inf.* Oswald
IS	Sharpe	John	1842–93	Leeds	White, Kelly
IS	Simpson	Joseph	1848	Doncaster	*Inf.* Oswald
IS	Swallow	John	1848	Pontefract	*Inf.* Oswald
IS	Smith	Isaac	1866–7	Bradford	White, Kelly
IS	Smith	James	1866	Bradford	White
IS	Shaw	James	1887–93	Batley	Slater, Kelly
LS	Sedgewick	Leonard	1834–7	Leeds	White
LS	Sedgewick	Leonard	1867	Barnsley	Kelly
MS	Sedgewick	Maria	1834	Leeds	Leeds Borough Dir.
NS	Shaw	N	1867	Bradford	Kelly
RS	Scorah	Richard	1748	Rawmarsh	*Inf.* Oswald
WS	Smith	William	1837–42	Leeds	White
WS	Shaw	William	1842–53	Batley	White
WS	Shaw	William	1866	Bradford	White
	Simms and Bickerdyke		1798	Leeds	Leeds Dir.
ET	Thompson	E	1867	Goole	Kelly
FT	Tummond	Fred	1848	Doncaster	*Inf.* Oswald
GT	Tunstall	George	1840	Leeds	W.R.R.D.
HT	Tunstall	Henry	1837–53	Leeds	White, W.R.R.D.
HT	Thompson	Henry	1861	Wakefield	*Inf.* Goodchild
IT	Tunstall	Joseph	1817–40	Leeds	Baines, Parsons, White, W.R.R.D.
IT	Tindall	John	1828–67	Huddersfield	Parsons, White, Kelly
IT	Tindall	James	1866–7	Huddersfield	White, Kelly
RT	Trueman	Richard	1854	Sheffield	Kelly
ST	Trueman	Samuel	1856–76	Sheffield	*Inf.* Oswald) Sheffield and Rotherham Trade Dir.
WT	Trueman	William	1833–41	Sheffield	*Inf.* Oswald) Pigot
WT	Tindall	William	1848	Huddersfield	*Inf.* Oswald
WT	Twigg	William	1887–91	Sheffield	Slater, White
AW	Wilson	Armitage	1853–66	Huddersfield & Mirfield	White
BW	Wroe	Bertie	1866	Bradford	White
CW	Windle	Christopher	1805–17	Leeds	W.R.R.D., Baines
GW	Ward	George	1867–93	Doncaster	Kelly, Slater
HW	Walker	Hannah (Mrs.)	1887–93	Wakefield	White, Kelly
IW	Wild	John	1814–15	Rotherham	Comm. Dir.
IW	Welby	Joseph	1826–30	Leeds	*Inf.* Oswald
IW	Woolley	Joseph	1826–34	Leeds	Parsons, White, Leeds Borough Dir.
IW	Wilson	John	1834–93	Leeds	White, Kelly, Leeds Borough Dir.
IW	Wilson	Joseph	1853–67	Leeds	White, Kelly
IW	Walker	James	1857–67	Wakefield	W.R.R.D., White
IW	Wale	John	1864	Sheffield	*Inf.* Oswald
IW	Woods	J	1867	Leeds	Kelly
IW	Woolley	John	1875–81	Leeds	White, Kelly
RW	Woolley	Ralph	1842–67	Leeds	White, Kelly
SW	Woolley	Sarah	1837	Leeds	White
SW	Walker	Sarah	1838	Wakefield	White
SW	Wroe (*or* Roe)	Sarah	1838–48	Bradford	*Inf.* Oswald
TW	Wild	Thomas	1777	Sheffield	W.R. Quarter Sess.
WW	Wild	William	1774	Rotherham	Guest's *Hist of Rotherham*
WW	Woffindale	William	1853–67	Leeds	White, Kelly

THE SEARCH FOR COAL IN THE EAST RIDING IN THE 18TH CENTURY

By David Neave

The 18th century saw at least three attempts to discover coal in the East Riding: at Warter in 1711–1716, at Market Weighton in 1749, and at Everingham in 1770. Little is known about the last two but a fairly full account of that at Warter has survived in the Pennington family papers (DDWA) in the East Riding County Record Office.

In Britain, where all minerals (except gold and silver) belong to the owner of the soil, landed proprietors have taken a close personal interest in the exploitation of the minerals underlying their estates.[1] In the 18th century the Lowthers and Curwens, of Cumberland, were amongst the leading 'colliery entrepreneurs', and it is not surprising to find the third great Cumberland family, the Penningtons of Muncaster, searching for coal on their lands.

Joseph Pennington (1678–1744) of Muncaster had on his marriage to Margaret, daughter of John, Viscount Lowther, of Lowther, Westmorland in 1707, moved to the family's estate at Warter, which had been acquired by the marriage of his father Sir William Pennington to Isabel, daughter and heiress of John Stapleton, of Warter, in 1679. Sir James Lowther, of Whitehaven, the cousin of Joseph Pennington's wife, was the foremost colliery owner in England. During his own and his father's lifetime, Whitehaven had grown from a village of 250 people to a town of 9,000 through the coal trade. When Sir James Lowther died in 1755 he was reported to be the richest commoner in England.[2] The Lowthers' wealth and power came from coal, and probably Joseph Pennington looked with some envy at the coal mines of his relations. The Cumberland estates of the Penningtons at this time, however, were not producing coal, so it seems that their eyes turned to their recently acquired Yorkshire lands.

To superintend his search for coal Joseph Pennington chose the Reverend Thomas Robinson, Rector of Ousby, in Cumberland. Robinson (d. 1719) had for many years devoted his leisure 'to collecting facts about the mining, minerals and natural history of the counties of Cumberland and Westmorland', which culminated in 1709 in his most famous work *An Essay towards a Natural History of Westmorland and Cumberland to which is annexed a Vindication of the Philosophical and Theological Paraphrase of the Mosaik System of the Creation.*[3] In May 1711 Robinson travelled to Warter to undertake the task of searching for coal in the chalk Wolds of the East Riding. He took with him a borer, William Greenwell, from Ousby, and bore rods from Killhope, Durham.[4] They searched unsuccessfully for a month, and Robinson returned to Cumberland. However Joseph Pennington continued the search with the bore rods and borer, and kept contact with Robinson by letter; a number of Robinson's letters in reply have survived, and from them and records of borings some account of the progress of the trials can be pieced together.

On 5 February 1712 Robinson wrote to Pennington:

> Yours of the 17th last with a box of ore came to my hand, and I am well pleased with the trial you made by the Rails, for that place was in my eye, and the account you sent me of your trial was very exact and particular; and the several strata and covers you went through seem to be very

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[1] T. S. Ashton and J. Sykes, *The Coal Industry of the 18th Century* (1959), Chapter 1; J. U. Nef, *The Rise of the British Coal Industry* (1932).

[2] D. Hay, *Whitehaven: A Short History* (Whitehaven, 1966), pp. 17–24, 42–55.

[3] For further details of this eccentric cleric see *D.N.B.*

[4] East Riding County Record Office, DDWA/6/84.

> encouraging. I could wish that you had gone deeper which would have given you more satisfaction. If ever you raise water you may expect coal. The specimens of ore you sent me are black and white sulphur; but the white sulphur is full of copper and if a vein of it could be met with, it would be very hopeful. About the middle of May next I intend, God willing, to wait upon you at Warter.[5]

Details of a boring made on 24 April 1712 record at the ninth layer:

> A black metal with water upon it and very little differing from coal, intermixt with very rich layers of a shining sulphur stone 2 foot.[6]

Robinson was again at Warter from May to early August 1712 and a number of trials were made. On 11 August a boring was made 'Agst the Railes in Clover-Grass Close' and earlier borings were made near a water-mill.[7] All these trials proved negative; by the end of August 1712 Robinson was becoming doubtful of finding coal and he wrote:

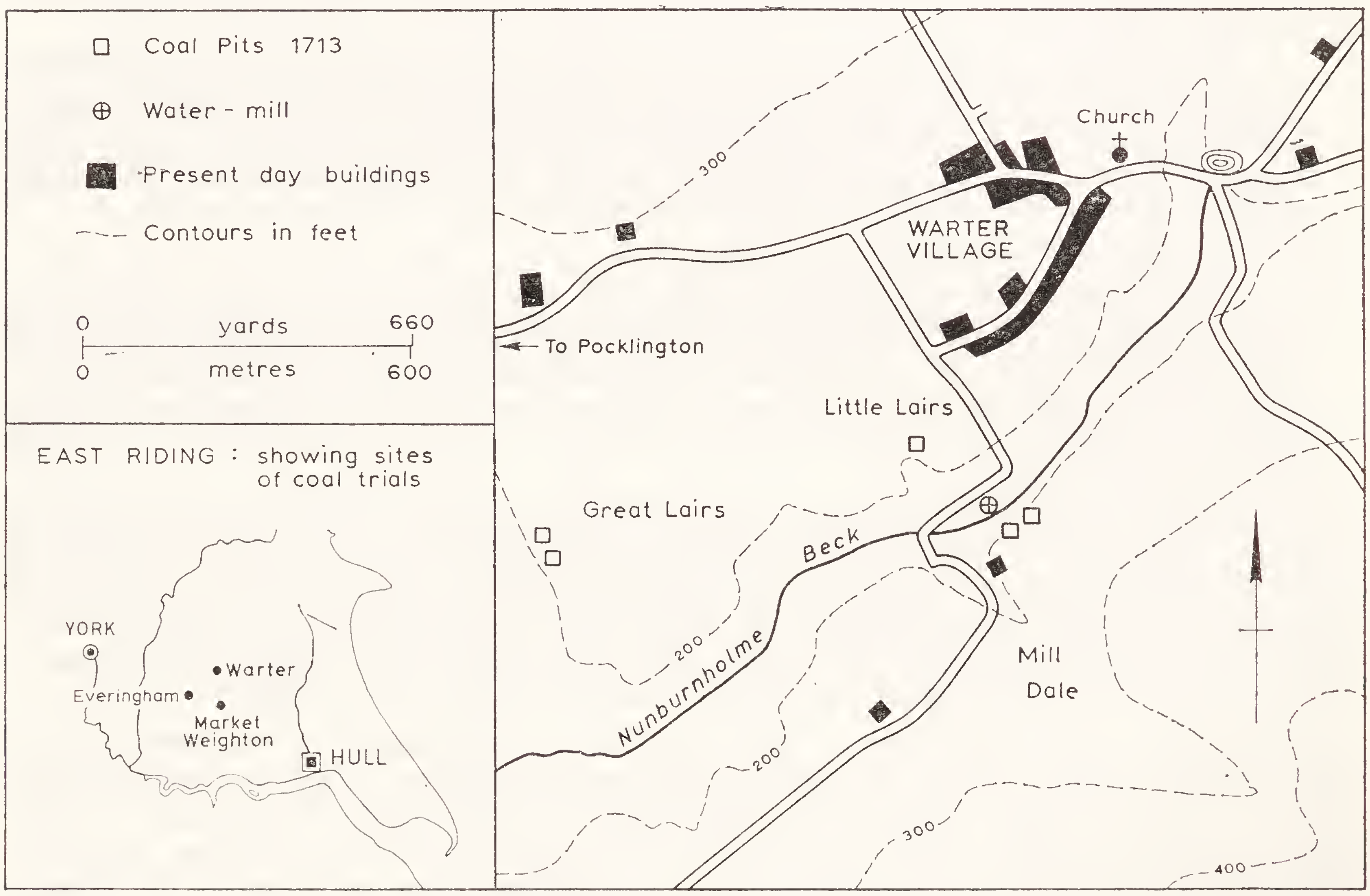

Fig. 6. The sites of the trials of 1713.

> I am pleased that you leave off that hopeless pit for I am satisfied that there is no coal in it; I am also pleased with so particular account as you gave me of your boring, but I doubt that you will meet with nothing but marcasite and other minerals which are seldom the natural companions of coal. If in your boring by the Mill you meet with no stone, and a feeder of water upon it. I doubt your success for coal. Your trial has been very noble and will be satisfaction to all your chalky country.[8]

However on 30 August 1712 another boring was made near the water-mill which was apparently successful, the strata being recorded thus:

Imprimis.	Two fathom and 2 foot of surface soil, black clay and black chiver.
2ndly	Half a foot of stone, greyish coloured
3rdly	One fathom of black chiver
4thly	Half a foot of greystone and a fathom of black metal alternately changeable about 7 fathoms
5thly	About a foot of greystone and 2 fathoms of black metal alternately changeable about 7 fathoms

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[5] DDWA/6/85.
[6] DDWA/6/86.
[7] *Ibid.*
[8] DDWA/6/85, Robinson to Pennington 21 August 1712.

6thly	A fathom of brown metal
7thly	A fathom of greystone and grey metal
8thly	A fathom of black slate
9thly	One yard 3 inches of rich coal
10thly	A grey metal.

> N.B. We have a very strong spring of water near the top and get fresh water and a small leader of coal about 3 inches thick at about 7 yards deep, as likewise freshwater again and another leader of coal about 4 inches thick between 20 and 30 yards deep and the whole depth we bored is about 21 fathom. (132 feet).[9]

Further borings were made in the area and Pennington and Robinson became confident of the discovery of coal. Richard Holme, of Lowther, wrote to Pennington on 31 January 1713:

> Mr. Robinson of Ousby was with me the other night and is positive from what you told him of the situation of the several covers, that you certainly have coal, and he desires he may be upon the spot before you make any further progress; nay he will come whether he be sent for or no, if he can learn the time you intend to begin work. When I told him what apprehensions you had of the greatness of the expences you must be at before you could propose to come at any profit, he made a jest of it and fell to his calculations, which indeed brought the matter very low.[10]

And Robinson himself wrote on 11 March 1713:

> If you please to defer your sinking till the week after Easter Day, I will set forward on Easter Tuesday and (God willing) will be with you at Warter Hall on Thursday after, and not only bring with me such workmen of judgment as will take your sinking by bargain, that you may know the charge of it; but I will stay with you myself till the work be footed, and then settle the colliery to your best advantage . . . . If I have time before Easter I will go myself to Whitehaven and take true dimensions of the engine and the engine pit . . . . I shall bring with me an excellent timber man and sinker.[11]

So confident was Robinson that coal had been found that in April he took six miners to Warter and on 18 April 1713 they signed a collective contract headed: 'Articles of agreement betwixt Jos. Pennington Esq. of Warter And the North Country Colliers for working the Colliery in the Manor of Warter till such time as the Pitts be coled'. The colliers were to be paid one shilling for every eight hours shift, and 'susistence mony for Diet & other necessaries shall be paid every Saturday night'.[12]

In mid-June 1713 when Thomas Robinson finally left Warter, 'an excellent seem of cole'[13] had been discovered and a colliery had been established, with the shafts planned and the colliers engaged. Before his departure he drew plans of the site,[14] of the proposed shafts, engine wheel and pump mechanism, and wrote 'Further directions how to Recover the Bore hole Cole whith a Moderate Computation of the Charge of it if it be lett to undertakers'. The computation of the charge was:

Sinking of the double shaft to the coal £5 per fathom if 40 yards	£100	0s	0d
The cast level and the cross drift	20	0	0
Making the engine pumps and engine case	40	0	0
The whole charge . .	160	0	0

It is not known to what extent Robinson's plans were carried out[15] but a study of the estate accounts reveals such entries as:

1713	May	9th	Paid the colliers out of my own pocket and charged to my Lady	£2	5s	2d
	Nov.	7th	Paid Humble, Staveley and Pearson in full of all, as by the Coal Book . .	3	14	4
1714	Nov.	15th	Allowed to Thomas Emett out of his bill for pit work, etc.		13	6[16]

References in the accounts of payments to individual colliers appear to be entered until January 1716. However in none of the accounts is there record of coal production, and coal was still being brought in from outside the area for the Warter household. Did Robinson and Pennington find coal or not? At Warter the concealed coalfield of Yorkshire has dipped to some 3,250 ft. below the surface. Pennington's borings, which reached only about 130 ft. must have gone through the Lower Lias and Rhaetic stratas of the Jurassic system. Could the coal have been the dark blue and black shale which occurs in the Lias and has been revealed in well sinkings in Warter village?[17]

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[9] DDWA/6/86.

[10] DDWA/6/85.

[11] *Ibid.*

[12] DDWA/10/51.

[13] DDWA/6/89.

[14] DDWA/6/88–89.

[15] DDWA/6/87.

[16] DDWA/10/2.

In 1748 John Pennington, son of Joseph, using the earlier plans and boring records, tried for coal by the water mill, and he added to the account of the boring on 30 August 1712 the following postscript:

> N.B. I tried on 19 December 1748, upon the credit of the above account, to find the 3 inches of coal at 7 yards deep in the place described, but found no such thing and do believe it not to be a true account. J. Pennington.[18]

The site of the Warter 'colliery' near the water mill is today a small wooded valley where the road from Warter to Nunburnholme makes an 'S' bend and crosses a small stream. The foundations of the water mill can be seen, and to the south-west a gamekeeper's house stands approximately on the site of the main bore hole. (Fig. 6).

Although Sir Joseph Pennington's unsuccessful attempt to find workable coal in the early part of the century must have been costly, it did not deter later attempts to find coal in the East Riding. In March 1749 a man who wished to try for coal at Market Weighton went to Warter and asked to borrow their bore rods. The steward at Warter wrote to Sir John Pennington: 'They have got down 12 yards but have not materials to get any further, ... they are in good hopes'.[19] And in March 1770 William Haggerston Constable was making plans for trials for coal at Everingham. A coal borer was brought from the West Riding and bore rods requested from James Catton, the steward of Sir Thomas Gascoigne, of Parlington House, Aberford, W. Riding. Catton replied that the bore rods were then in use at Sir Thomas's own colliery and added:

> I never was at Everingham but once, and then had no thought of coal in my head, and to me it seems unpromising, yet one would think there are some symptoms of coal, otherwise a trial would be needless.[20]

Needless it undoubtedly was.

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[17] See W. Edwards, *Concealed Coalfield of Yorkshire and Nottinghamshire*, H.M.S.O., 3rd Edn. (1955); R. Tate and J. F. Blake, *The Yorkshire Lias* (1876), p. 76; E. M. Cole, *Geological Rambles in Yorkshire* (1883), p. 29.

[18] DDWA/6/86.

[19] DDWA/12/2(a) John Dickinson to Sir John Pennington 17 March 1749.

[20] East Riding County Record Office, DDEV/60/20 James Catton to Randolph Penswick 11 March 1770.

THE YORKSHIRE ARCHAEOLOGICAL REGISTER: 1972

COMPILED BY STEPHEN MOORHOUSE

This year's Register follows the format of its predecessor, although with some minor changes which it is hoped will increase its usefulness. It has been decided not to sub-divide the Prehistoric period, due to the difficulty of ascribing certain pre-Roman finds with any precision. It has been possible to introduce a back-reference system, giving the last reference to a site previously mentioned in the Register.

An aerial reconnaissance and photographic interpretation section is included for the first time, and it is hoped that a report of work connected with the Society's Aerial Archaeology Committee will be a regular feature.

It is encouraging to note some interesting entries dealing with early industrial sites and their machinery, and it is hoped that these will lead others working on this field to contribute. Less encouraging is the failure of certain fieldworkers known to have been active to return their questionnaires. Thus it has again been impossible to prepare a comprehensive coverage of work in the county.

PREHISTORIC

AMPLEFORTH, WASS MOOR, WATERLOO FARM, N.R. (SE 574812) A broken leaf-shaped arrowhead, scrapers, cores and flake chippings were found on the surface by W. R. Goodall and M. K. Maw.

ASKWITH, W.R. (SE 181512) S. W. Feather has located two stones with cup and cup and ring marks respectively in covered vegetation.

BRIDLINGTON, E.R. (TA 177677) A flint knife or dagger of probable Beaker date was found in a stream by D. Swift. It is now in Hull Museum. The dagger is of a mottled brown flint, with an area of primary flake scar on the reverse. It bears possible notches. Weight 56gm. The nearest parallel appears to be a flint dagger from a barrow at Nether Low, Chelmorton, Derbyshire. (*Bateman Catalogue*, Sheffield Museum (1899) pp. 39-40.)

BURTON FLEMING, E.R. (TA 094703) In the fifth area of this La Tène cemetery, some 800m N. of the fourth area (*Register* 1971 p. 218) and 1100m from the S. limit of the cemetery, 22 plough-flattened barrows were excavated by I. M. Stead for the Department of the Environment. In size they ranged from 4m to 8m across; each was surrounded by a square-plan ditch; and each had covered a single burial in a central grave. The ditches were completely excavated but no burials were found there. The grave-goods were more numerous than in the areas previously excavated: three bronze bracelets, a fine shale bracelet, a bronze brooch, 13 iron brooches and four pots.

COMMONDALE, N.R. (NZ 645098) S. White has recovered a spread of flints along the footpath from North Ings Moor to near Wayworth Farm; they appear through rain wash. Most are flakes and cores but included are a fine oval scraper, a petit tranchet arrowhead and thumb-nail scrapers.

COTTAM, E.R. (SE 984667) The excavation of Barrows A–D [*Y.A.J.* XLII 168 (1970) p. 389] was concluded by I. M. Stead for the Department of the Environment. The ditches were completely emptied, but no burials were found. Two others, E and F, were excavated. One was a concentration of chalk on the ploughed surface; the other was found after study of air photographs. Both were surrounded by square-plan ditches: E, 9m square, had no surviving grave; F, 7m square, had a contracted inhumation in a shallow central pit. Trial trenches revealed a contracted inhumation in a pit west of D and north of A, and another, shallow and disturbed, between Barrows A and B; these appear never to have been covered by barrows. No grave-goods were found.

Trial trenches to the E. of the barrows traced lines of two dykes which cut Barrow D, they produced a complicated picture of ditches as well as a hollow-way, a row of large post-pits, and a circular feature, possibly a hut.

Centrally between A and B were remains of a cruciform earthwork which had linked the tops of the barrows. The feature was defined by shallow ditches and had measured about 30m across. One of its ditches produced a worn late-Roman coin, but the feature might be later.

DANBY, DANBY RIGG, N.R. (NZ 705061) D. Smith (O.S. Archaeology Division) noted two parallel banks with rows of three pits on the inner margins; they are the remains of an attempt to make a cross-ridge work similar to a set on *Wilks Rigg* E. of *Ugthorpe*. They line up with similar lengths close to the tumulus marked 'Earthwork' on the 6 in. map at NZ 707061. The ground is rocky and the attempt appears to have been abandoned in favour of a dry stone wall to the S. Later cairns and barrows were raised on its line.

DENBY, CASTLE HILL, W.R. (SE 205069) J. A. Gilks found beach pebbles of black flint, core trimming flakes, flakes, chippings and convex scrapers (one edge polished) of mottled brown-grey and white flint on the plough-reduced rampart of the Iron Age enclosure at *Castle Hill*. [See *Register* 1971 p. 217.]

The two axes found in 1970 were submitted to Mr. K. S. Siddiqui, of the Institute of Geological Sciences, Leeds, who reported that one belonged to Group VI (*Great Langdale*) and the second to Group XV (*Lake District*). Finds in Tolson Memorial Museum.

ESTON, TEN ACRE BANK, N.R. (NZ 555165) A. Zealand reports the finding of an oval double-edged chert scraper with bifacial scale flaking, 8·3cm long and 6·5cm wide. Deposited with the Teesside Museum Service.

——, WILTON (NZ 579179) A. Zealand reports the finding of a sandstone saddle quern 44·5cm long and 30·48cm wide. Deposited with Teesside Museum Service.

——, YEARBY (NZ 598210) A. Zealand reports a surface find of a bracelet of La Tène type. It is 6·35cm diameter and has external swellings separated by pierced lateral ribs with an internal bevel but no opening. Retained by finder.

FARNDALE EAST, LOWNA, N.R. (SE 688922) Several flint flakes have been found on a ploughed surface at *Birch Hagg Field* by W. R. Goodall and M. K. Maw.

FLAMBOROUGH, FLAMBOROUGH HEAD, E.R. A pierced mace head of (?)dolerite was found on a ploughed field near *Beacon Hill* by R. and J. Jefferson. It measures 6·50cm by 5·75cm with an hour-glass perforation 1·05cm diameter. It was found with two leaf shaped arrowheads, scrapers and numerous flakes and cores.

GOATLAND, THORN HILL, N.R. (NZ 833002) A polished stone axe of Neolithic type was found ploughed up in the war intake of 1940 and given to T. Dodsworth. It is made of light chalky (?)greenstone, 17cm long by 8cm wide, tapering to 6cm and 3cm wide, with flat sides.

GLAISDALE, HART LEAP, N.R. (NZ 732034 to 736038) Standing stones 13m apart stand on the remains of a cross-ridge earthwork unrecorded, apart from notes by F. Elgee after the publication of *Early Man* in 1930. R. H. Hayes has traced it towards Hardhill or Highdale Farm, where it is visible as double ditches 2m wide, with a rampart between, and crowned by a stone parapet of which the standing stones and three others remain. Information from F. Hall suggests the bank extends down the Fryup side to the WNW.

GOODMANHAM, WOOD FARM, E.R. (SE 91484545) D. Smith (O.S.) has recovered a tranchet-type axe of light grey wold flint from the side of a round barrow. It is 9·6cm long by 2–3cm wide with a slightly polished area on one side.

GOLDSBOROUGH, W.R. (SE 371553) A Neolithic axe was found by R. and M. Voakes in the alluvium of the Nidd Valley. Its cutting edge is broken and is made of dolerite with a vein of dark fine-grained igneous material. It was originally polished but now very deeply pitted over most of its surface. Donated to Harrogate Museum.

GRINDALE, E.R. (TA 150704) Three plough-levelled barrows were excavated by T. G. Manby for the Prehistory Research Section of the Yorks. Arch. Soc.

Grindale—Barrow 1. A two-period barrow with central pit feature filled with chalk rubble. The inner ditch was 16m diameter internally, cut down into rock to a depth of 2m. A burning timber structure had collapsed into the silted-up hollow of the ditch, and been buried by chalk rubble upcast from the outer ditch, 24–26m diameter with causeways on the NE. and W. side.

—— *—Barrow 2.* A square ditched barrow of Arras Culture type, 13·5 by 15m internally. A central rectangular grave had been robbed. There was the undisturbed remains of a sucking pig in the SW. corner.

Boynton—Barrow 1 had a ring ditch 22m in internal diameter, of linked quarry pits. Sherds from Peterborough-Ware bowls, flint implements and utilised stones were at the base of the secondary ditch silting. A central henge-type feature, 8m diameter had opposed causeways 3m wide. The ditches have constricted terminals and one had a post slot; they had been filled soon after being dug as the sides were unweathered.

GUISBOROUGH, N.R. (centered at NZ 615121) Flint waste and artifact material has been located on *Codhill Heights*. Finds include a leaf-shaped arrowhead, several thumb-nail scrapers, and a block of grey flint weighing 7½ lbs; it is axe-shaped, 22·8cm long 15·2cm wide at the base and 9cm thick tapering to a rough point; its sides have long flake scars. The large core was found 30cm below the surface on natural, with burnt wood, charcoal and reddened stones, but no other flint.

——, COMMONDALE, N.R. (NZ 612123) Work on the stone circle at *Codhill Slack* by W. Pearson and the Teesside Archaeological Society [*Y.A.J.* 43 (1971) p. 192]: the stonework surround was cleared and the inner and outer limits of the bank determined. Finds were occasional flints contrasting with the flint concentration around the central cairn.

HALIFAX, SHELF, W.R. (SE 117273) The missing looped-palstave of the Wallington tradition (10th–8th centuries B.C.), from a hoard of eight looped-palstaves and two spearheads, found at *Upper Westercroft, Shelf*, in 1856, has been re-located by J. A. Gilks in Bankfield Museum, Halifax. Redrawn by C. B. Burgess (from the illustration in the *Bronze Age Metalwork Card Catalogue*) in *Bronze Age Metalwork in Northern England, c. 1000 to 700 B.C.* (1968), Fig. 6. 1. Axe now in the Tolson Memorial Museum, and to be re-published in the *J. Huddersfield and District Arch. Soc.*

KIRKBYMOORSIDE, HAGG FARM, N.R. (SE 671873) A ploughed-down barrow or cairn of limestone rubble and large burnt stones was shown to R. H. Hayes.

MARISHES, BELLIFAX GRANGE, N.R. (SE 803786) R. H. Hayes reports that W. R. Beale has found a Neolithic stone axe of (?)pimply greenstone-drift 13cm long, 4·2cm and 3·2cm wide, a polished stone (?)pounder 11cm by 2cm and a piece of flint 8cm by 2cm, possibly used as an end scraper. A second, but broken, Neothic axe of (?)black basalt was also found.

MIDGLEY, HIGH ROUGH, W.R. (SE 015274) J. A. Gilks reports Mesolithic flints, including waste flakes and chippings, of brown chert and flint patinated white. A Neolithic leaf-shaped arrowhead (3·5cm long), of translucent brown flint, was also picked up on the same site.

OXENHOPE, W. R. (SE 463226) J. A. Gilks and G. Chambers continued the sifting of the spoil heaps at *Nab Water*, Site 3 [*Register* 1971 p. 217]. Mixed with dumped clay, peat and black soil were obliquely-blunted microliths, core trimming flakes, flakes, blades and chippings.

POCKLINGTON, E.R. (SE 796485) The Yorkshire Museum reports the discovery of three bronze socketed axes, two complete and one broken; these are now in the Museum.

PICKERING, BLANSBY PARK, N.R. (SE 818867) An Iron Age or Saxon glass bead was found. In the collection of R. Harrison, Blansby Park Farm.

RISHWORTH, BILBERRY HILL, W.R. (SE 039159) J. A. Gilks and G. Chambers found Mesolithic flints, including waste flakes, chippings and a pear-shaped microlith in water-eroded channels at 1200ft. O.D. A Neolithic petit tranchet arrowhead, of mottled grey-brown flint, Class D, was also found on an erosion patch at SE 038159. [*Register* 1971 p. 217.]

SHEFFIELD, MOSCAR, W.R. (SK 225857) A barrow excavated at *Crow Chin* by A. M. Fleming had a central grave with a robbed cist beneath a boat-shaped cairn. It underlay a turf mound 18m dia. with stone kerb. The mound contained a redeposited Mesolithic industry of flint and chert, of several thousand pieces. Palynological investigation of the deposits of the old surface beneath the barrow and of peat deposits at *Crow Chin Moss* (SK 228859) has been carried out by Dr. R. L. Jones.

SINNINGTON, CLIFFE FARM, N.R. (SE 750851) A small hand axe, found in ploughing, is of fine-grained sandstone, 10·5cm long 3cm wide and 2·5cm thick.

SKIPTON, W.R. (SE 000506) S. W. Feather has located a cup-marked rock outcrop; there is a small boulder-walled enclosure against a rock outcrop nearby.

THORNE, W.R. (SE 730160) New dykes through the peat of *Thorne Moor* exposed two areas wherein all the large trees showed superficial burning. Excavation by P. C. Buckland also revealed a rough trackway of small trees and brushwood overlain by more massive timbers. These features relate to a primary phase of forest clearance, in part contemporary with widespread flooding on Hatfield Chase. The C^{14} dates of 3080±90 B.P. (Birm. 336)—on the burnt surface of a tree—and 2980±110 B.P. (Birm. 358)—on bark from a pine in the trackway—show this activity to be of Late Bronze Age date. An interim note is to appear in *Nature* (in the press); see also *The Times* 3rd July 1972.

THORNER, W.R. (SE 386418) The Yorkshire Museum report the discovery of a stone axe.

THORNTON IN LONSDALE, W.R. (SD 709787) Excavation was carried out by A. King on the *Apronfull of Stones* cairn in advance of river erosion. The site is *c.* 18m in diameter, on a boulder-clay river cliff. A primary pit 2·75m long, 1m wide and 1·15m deep contained two facing slabs along its N. side; a smaller pit to the E. was 2m by 0·75m and 0·25m deep. A small jab-decorated slab was found between the pits. To the W. of the large pit, a small (1m by 0·40m) non-rectangular pit contained a badly preserved inhumation. There were no grave goods in this, but a scatter of 30 flint flakes was found around the grave.

THORPE SALVIN, THORPE COMMON, W.R. (SK 531801) The site of a rock shelter cut into the Magnesian limestone was discovered in 1969 by G. White. It was excavated during Oct. 1969 and August 1972 by G. White and P. A Mellars. Two levels of Mesolithic occupation were found; an upper level with a pure 'geometric' microlithic industry and a lower containing 'geometric' and 'non-geometric' microlithic forms. Apparently associated with the upper-most horizon was a linear setting of large stones, perhaps the base of some structure. Several hearths were within this. Stratigraphical and Palynological investigations of the deposits are being carried out by Dr. R. L. Jones.

WENTBRIDGE, W.R. (SE 496165) E. Houlder and M. Leach report that a crop mark on an infra-red 8443 air photograph appears to be an enclosure with part of an attached field system; see *Pontefract and Dist. Arch. Journ.* 1974.

WOOLLEY, WOOLLEY EDGE, W.R. (SE 309139) The Rev. L. T. Johnson reports ploughed-up Mesolithic material, including cores, core trimming flakes, flakes, blades and chippings, a Neolithic petit tranchet arrowhead, Class C1, and an Early Bronze Age scraper/borer, both of translucent brown flint. Retained by the finder.

YORK (SE 587529) The Yorkshire Museum reports the discovery of a stone axe, deposited in the Museum.

ROMAN

BEADLAM, RICALL BRIDGE, N.R. (SE 643842) Work was continued on this villa site by I. M. Stead for the Department of the Environment; the site is now in the Guardianship of the Department. The central part of the E. wing was excavated, showing three periods of construction. The foundations for the walls of the first were of cobbles, a method not seen in the other two wings. The plan so far is a rectangle, 7·5m wide: one end and an 18m length of the side walls have been uncovered. This was replaced by a building consisting of one room with an apsidal end, 7·5m wide and 11m long to the centre of the apse. The final construction was a crude length of wall built on top of rubble scattered when the earlier buildings had been destroyed. [See *Yorks. Arch. Journ.,* 43 (1971) 178–186 with plans.]

BRADFORD, W.R. The SE. extension of the Margary 721 South road from Tong Street (SE 195300) to Drighlington (SE 217284) has been traced to beyond the junction with Margary 712 at SE 214286 by D. Haigh and the Bradford G.S. Arch. Soc. and members of the W.E.A. class at Saddleworth. No indications of the junction were found on the ground or on air photographs. 721 is visible at three points. The agger widths vary from 6·4m to 15·24m and the heights up to 0·9m.

——, BRADFORD MOOR, W.R. (SE 180338) An AE of Antoninanus Gallienus, fortune standing FORTVNA REDVX, was found in 1971 by C. Sipovac.

CLECKHEATON, HARTSHEAD MOOR TOP, W.R. (SE 170249) See Manchester-Tadcaster road survey at end of this section.

DONCASTER, W.R. (SE 575035) Rescue excavations by P. C. Buckland for the Department of the Environment disclosed the wall of the Antonine small fort NE. of the *Parish Church*, further N. than expected. It was 2·4m thick and survived 0·5m high. The Flavian ditch and rampart base for the earlier large fort were located in *High Fishergate*.

EDLINGTON, EDLINGTON WOOD, W.R. (SK 54959775) Excavations by A. B. Sumpter for the Department of the Environment showed that this earthwork complex threatened by quarrying was a Romano-British farmstead with three periods of occupation. The first, Flavian, was a stone-walled enclosure with an external rock-cut ditch. A rebuilt defence of the later second century surrounded small rectangular stone buildings with tiled roofs. After a short abandonment a cruder earth and stone wall was used early in the third century to enclose a partly-cobbled area. Probable field boundaries nearby are being surveyed by the York office of R.C.H.M.

GILLING EAST, TEMPLE HILL, N.R. (SE 613764 to 615764) Examination of a prominent rise, thought to be a cross-ridge work, by W. R. Goodall, M. W. Maw, and R. H. Hayes now suggests that it is a natural fault.

GOMERSAL, SWINCLIFFE, W.R. (SE 202275) For Roman road see Manchester-Tadcaster road survey at end of this section.

HUDDERSFIELD, LINDLEY MOOR ROAD, W.R. (SE 096183) and WARREN HOUSE FARM (SE 112192) For Roman road see Manchester-Tadcaster road survey at end of this section.

KILDALE, CRAG BANK WOOD, N.R. (NZ 630098) To the W. of the entrance of the E. enclosure of 'Celtic Fields' mentioned by Elgee in *Early Man* (p. 218), the floor of a round or oval hut was excavated by R. S. Close in 1959–60; there were no finds apart from a floor paved with slabs of stone. Work during 1972 by R. S. Close and D. A. Spratt, before tree-planting, produced a bee-hive quernstone, sherds including part of a 2nd-century mortarium, traces of iron, and fragments of jet.

——, LITTLE KILDALE, N.R. (NZ 624092) Part of a flat rotary quern of Neidermendig/Mayen lava of possible R-B. date was found by R. S. Close at *Warren House*.

KIRKBYMOORSIDE, HUNT KENNELS, N.R. (SE 694862) A late 4th-century cooking pot of S.S. type 26 with internal groove was found in a drainage ditch.

NEWTON KYME, W.R. (SE 462450) The Yorkshire Museum reports the discovery of a Denarius of Marcus Aurelius (RIC 271), now in the Museum.

OSBALDWICK, N.R. (SE 632532) The Yorkshire Museum report the recovery of 3rd-4th-century pottery and tile, with medieval pottery.

PICKERING, BLANSBY PARK, N.R. (SE 812875) Many 4th-century sherds, a 2nd-century mortarium rim, half a bee-hive-type quern, and an iron latch lifter were found NW. of the farm, where a hedge and bank were removed in 1940. R. H. Hayes examined the ploughed site in 1972 but there were no indications of buildings.

POCKLINGTON, E.R. (SE 818488) The Yorkshire Museum reports the discovery of grey-ware sherds.

RUDSTON, E.R. (TA 088667) I. M. Stead, for the Department of the Environment, concentrated on uncovering the two mosaic pavements (*Register* 1971 p. 220), which were then lifted by J. E. Bartlett. The larger pavement has a central circular panel, with a victorious charioteer, surrounded by 4 circular panels each with a bust of a Season, they are separated by 4 rectangular panels each with a bird and fruit. The head of Spring is a particularly fine piece of work. Excavation beyond the pavements showed an earlier domestic building on a slightly different orientation.

SADDLEWORTH, W.R. (SD 964059) For Roman road see Manchester-Tadcaster road survey at end of this section.

TADCASTER, W.R. (SE 488437) The Yorkshire Museum reports that trial excavation in advance of redevelopment failed to locate any Roman or medieval features.

WADWORTH to HATFIELD, W.R. (SK 566987 to SE 680050) Preliminary fieldwork on the intended route of the M18 motorway has shown that at least 3 major Roman 'native' sites and one Iron Age site will be destroyed.

WENTBRIDGE, W.R. (SE 484179) The R-B. site located in 1967 by C. J. Baines (*Y.A.J.* XLII (1968), p. 117) has been identified on an infra-red 8443 air photograph as a possible farmhouse by E. Houlder and M. Leach; see *Pontefract and Dist. Arch. Journ.* 1974.

——, W.R. (SE 487178) E. Houlder and M. Leach report the apparent traces of an early marching camp revealed as crop marks in two fields, bisected by a modern cutting of *c.* 1840, seen on an infra-red air photograph. See above entry.

YORK (SE 597527) The Yorkshire Museum report the recovery of 2nd-century pottery, oyster shells, bones, and an Urbs coin of Constantine the Great, together with 13th-14th century pottery.

——, BORTHWICK INSTITUTE (SE 607520) Work on a second trench by the York Excavation Group (*Register* 1971 p. 221) produced kiln debris including further red Legionary ware and more unusual shapes, imitation samian, and many varieties of tile and brick which bore the Legio IX Hispana stamp. A hard-packed foundation of pitched tile was possibly the base of a tile kiln dismantled before *c.* A.D. 150.

—— (SE 607005255) Part of the road and E. ditch was sectioned by L. P. Wenham 400m outside the *porta decumana*, off *Groves Lane*. Part of a tile-stamped LEGIO . . . and some 50 sherds of Roman pottery lay on the surviving road surfaces.

—— (SE 60635218) Excavation at interval tower NE6 by L. P. Wenham showed 4 periods of rampart: Cerealian, Agricolan, Trajanic and Severan. An Agricolan timber tower was superseded by a Trajanic stone tower. The rear of the latter was re-built in the Antonine rather than the Severan period. Part of a possible oven was discovered at the rear of the Trajanic rampart.

MANCHESTER TO TADCASTER ROAD SURVEY Fieldwork by Bradford Grammar School Arch. Soc. and members of the Saddleworth W.E.A. Archaeology class, led by D. Haigh between Saddleworth (SD 957054) and Tadcaster West (SE 487435) aims to recover the line of the Manchester-Tadcaster road (Margary 712). Short breaks totalling 3 miles are left between the E. outskirts of Oldham and the W. outskirts of Leeds; work is still continuing. The B.G.S.A.S. has kept a watch on the M62 construction between Outlane (SE 092181) and Gomersal (SE 224276).
Results include:—

SADDLEWORTH (SD 964059) The agger, 10·6m wide and 0·6m high, contained gritstone which is also visible in nearby field walls. There is a continuous first alignment from Manchester (Margary, *Roman Roads in Britain,* II, p. 98).

HULL MILL to CASTLESHAW ROMAN FORTS. (SD 989085 to SD 998096) A wide and pronounced agger with widths of from 13·7m to 16·4m and heights between 0·4m and 0·9m aligned on the SW. corner of the forts, where the alignment changes.

CASTLESHAW FORTS to STANDEDGE (SE 001097 to SE 007101) The road leading from Castleshaw to Slack has been identified by Prof. G. D. B. Jones at SE 003098 in *Britannia* 2 (1971), 253; (see also Ammon Wrigley in *Songs of a Moorland Parish* (1912) and I. A. Richmond *Proc. Soc. Antiqs.* 80 (1946) 115) which show agger widths of 7·6m to 10·6m and heights, often from deepened and eroded ditches, of 0·45m to 1·8m.

HUDDERSFIELD, LINDLEY MOOR ROAD (SE 096183) The encroachment here, containing a path 2·4m wide, is 4m wide and 0·3 to 0·6m below adjacent modern road and over 91m long. Small smooth sandstone/gritstone cobbles scattered throughout the path suggest possible metalling. Destroyed by M62.

——, WARREN HOUSE FARM (SE 112192) A shallow agger *c.* 10·6m wide, 0·3m high and over 45m long, destroyed by M62.

CLECKHEATON, HARTSHEAD MOOR TOP (SE 170249) Excavation in March 1972, prior to the construction of M62, revealed that the road on a clay-based agger was almost entirely destroyed, but for a single (?)kerbstone. There was a ditch on the SE. side only, which contained sandstone blocks and broken fragments in the brown silt. The possible road width was about 7·6m. Report and section deposited with the Roman Antiquities section of the Y.A.S.

GOMERSAL, SWINCLIFFE (SE 202275) Scattered metalling composed of iron slag visible in a farm path for 12m, destroyed by M62.

ROUNDHAY to BARWICK IN ELMET (SE 355388 to SE 368388) The agger is 7·6m to 10m wide and 0·3m to 0·6m high. The N. and S. ditches are now (?)modern field drains. Material from the recent cleaning of these has been heaped on the agger, which is visible 0·45m high at a point where the S. drain is absent.

ANGLO-SAXON

DONCASTER, W.R. (SE 575035) The Saxon burh ditch was sectioned in *High Fishergate,* but contained only residual Roman material. Its clean sand and gravel contents suggested backfilling by Norman castle builders after a short period of use.

PICKERING, BLANSBY PARK, N.R. See Prehistoric section.

SETTLE, ATTERMIRE CAVE, W.R. (SD 842642) A styca of Aethelred II of Northumbria, 841–844, monyer Cutheard, was found in 1970 by J. P. White and J. Goleby.

TOLLESBY, N.R. See Medieval section.

MEDIEVAL

BAYSDALE, LITTLE HOGRAH MOOR, N.R. (NZ 648065) R. H. Hayes reports a series of small bell-pits, a possible source of iron ore for the bloomery excavated at NZ 646075 (cf. *Med. Arch.* IX (1965) p. 218).

BRADFORD, W.R. (SE 163353) The upper part of a medieval stone quern was found in 1969 by J. Newsam in a garden at *73 Kings Road.* Now in Bradford City Museum.

BRANDSBY, N.R. (SE 605717) The Yorkshire Museum reports the discovery of a stone mortar with two lugs and a spout, possibly of medieval date.

BRIDLINGTON, HILDERTHORPE E.R. (TA 173649) A pottery spindlewhorl, possibly of medieval date, was found in 1970 by R. Pemberton.

DEWSBURY, THORNHILL HALL, W.R. (SE 257189) The survey of this moated manor house site was completed by R. A. Varley and T. P. Wild on behalf of Dewsbury Museum. The excavation concentrated on the Hall and the E. Wing. Medieval and Post-Medieval pottery was found with nails, window strip and window glass. See *Y.A.J.* XLI (1965) 332; *Med. Arch.* IX (1965) and *Y.A.J.* XLII (1970) 389.

DONCASTER, W.R. (SE 575035) Excavations to date have clarified the position of the Motte and its baileys in the area of the *Parish Church* (see *Current Archaeology* 33 (July 1972) pp. 273–277).

FARNDALE, MIDDLE HEADS, N.R. (SE 633007) A mass of iron slag was seen in the side of Gill Beck by T. Dodsworth.

GILLING EAST, POTTER LANE, N.R. (SE 614769) Wasters from a late medieval pottery kiln shown to J. H. Rushton included green-glazed sherds, with part of an angular trough-like vessel; bung hole cisterns were also present. The site is now built over. A spindle whorl and oyster shells have been found in the field to the NE.

GRISTHORPE, N.R. (TA 108818) The moated site at *Newbiggin* was surveyed and a trial excavation was undertaken by R. A. Varley for the North Riding Archaeological Research Committee. The dry moat enclosed a central square area, but excavation on this platform did not reveal postholes or structures, and no finds to date the site were made; excavations are to continue.

HALIFAX, W.R. (SE 095253) Excavations at *Goal Lane* were continued by J. A. Gilks (who is also responsible for Halifax items below) in advance of re-development. House VIII was shown to have had, in its final phase, two rooms divided by a stone stair base. 13th and 14th-century pottery was found with roof slates above these floors, and the N. and W. walls were destroyed in the 16th century with the digging of a cellar. See *Y.A.J.* 43 (1971) p. 196.

—— (SE 09502533) Excavations on the site of *22–24 Wade Street* disclosed a rectangular stone building, its foundations largely robbed. East Pennine Gritty wares of late-13th/early 14th century date were found above the floor.

—— (SE 09482524) At the rear of the *Lower George Hotel, Woolshops,* excavation showed houses of two main periods, one with a floor deposit containing 13th-14th-century E. Pennine wares, the other a large house of late-15th or early 16th-century date.

——, OVENDEN, W.R. (SE 083268) The survey of White Hall showed four phases and correct those given in *Y.A.J.* 43 (1971) p. 196. (i) Early 14th century: postholes and rubble. (ii) Late 14th century: 3-bay aisled hall. (iii) Early 15th century: replacement of one bay by two timber-framed cross wings. (iv) Encased in stone in the mid-17th century. Records of the survey are in the Tolson Memorial Museum, Huddersfield.

——, OVENDEN WOOD (SE 068264) A survey of *Long Can* showed the house to have been a two-bay aisled hall of the late 14th or early 15th century, encased in stone early in the 17th century. Records of the survey in the Tolson Museum.

HEDON, THORNE ROAD, E.R. (TA 192283) An area of the possible East Haven, examined by H. A. W. Burl prior to building development produced quantities of medieval green-glazed sherds but no trace of structures. 13th-century sherds 55cm below the modern surface and concentrated in the W. of the site suggest medieval occupation W. of the excavated area, possibly where Thorne Road now runs, and that the area examined formed part of plots for dwellings.

——, MAGDALEN LANE (TA 192287) H. A. W. Burl sectioned the probable flood bank which turns abruptly at the junction of *Magdalen Lane* and *Thirty Acre Lane*. The N. bank, for the Burstwick Beck, was of compacted clay perhaps from the ditch to its N. where *Magdalen Lane* now runs. There was no evidence of rebuilding and the bank was barren of finds except for probable 13th-century sherds on the old land surface. The E. bank was of clay, and a small green-glazed sherd from near the bottom indicated a medieval origin.

HUDDERSFIELD, OUTLANE, W.R. (SE 097175) Among unsorted finds in the Tolson Memorial Museum from the 1913–15 excavations at the Roman fort at Slack, J. A. Gilks found a sherd possibly from a 3-handled Stamford-ware pitcher of the 12th century. See material from Pontefract Priory in *Pubns. Thoresby Soc.* xlix (1962–4) pp. 120–122, fig. 28: 1 and 3, for similar horizontal-grooved decoration.

HULL, E. R. (TA 10102848) Excavations by P. Armstrong for Hull Museums in advance of development on High Street, north and south of Grimsby Lane, showed four houses, of varying construction, standing in the 14th century. One was of brick, incorporating a stone spiral staircase; a second was two-roomed, timber framed, on stone, brick and cobble foundations, and two others, with stone on chalk footings, appear to have been substantial hall-like structures. An adjacent bake-oven was also excavated. French green-glazed and painted wares were plentiful. (See also *Hull Museums Bulletin* 7 (Dec. 1971)).

KILDALE, KILDALE MANOR, N.R. (NZ 603095) Excavations were resumed during 1972 by R. S. Close to the W. of the oven complex in the industrial courtyard. A drain or conduit was located leading towards the ovens; under a mass of building rubble and roofing slates two sherds of 12th-13th-century grey gritty ware were found; overlying it were sherds of the 14th-17th century with a silver sixpence of Elizabeth dated 1566. Further walls of a building located in 1958 were found. A solid foundation 1·2m wide formed a junction with a well-made plinth; a further wall running N-S. was located, damaged by a 20th-century rubbish pit. There is a fireplace in the NE. corner. Finds include pottery from the 14th-18th centuries, a sword handle, door fittings and a glass bead. For previous reports see *Med. Arch.* VI–VII (1962–3) p. 338; XIV (1970) p. 195, and *Y.A.J.* XLII pt. 167 (1969) p. 243.

KILTON, KILTON CASTLE, N.R. (NZ 703176) Work was continued by F. A. Aberg for the Adult Education Department, Leeds University at the E. end of the castle. The bakehouse and SE. tower were completed [*Register* 1971 p. 224]. The 14th and 15th-century bakehouse was some 92cm above the flint in this area, which was uneven and covered by stone chippings and dust from the construction of the curtain wall. Occupation following this in the early 13th century left a thick layer of charcoal which continued under the SE. tower. Excavation outside the SE. tower showed only very shallow foundations covered by a packed layer of clay. For a survey of the site and plan up to 1968 see *Med. Arch.* XIII (1969) p. 262, Fig. 79.

KIRKLEAVINGTON, N.R. (NZ 431097) Emergency excavation by extra-mural students of Leeds University led by F. A. Aberg located a cobbled floor associated with pottery, but it had been too badly destroyed by ploughing to recover the plan of the building. The pottery was 13th and early 14th-century in date. Documentary evidence locates the manor house in the area of this site and until recently a banked enclosure existed.

LASTINGHAM, DAISY FARM. See Post-Medieval section.

——, OTTERBURN GARTH, N.R. (SE 729904) Excavations were resumed by R. H. Hayes in 1972 [*Register* 1971 p. 225]. The west wall footings of the medieval building had two postholes between flags, possibly as an entrance. The clay floor of the 13th-14th-century building was cut on the E. by a large modern ashpit. The prominent bank on the S. side was a tumble of stones with sherds of periods up to the 18th century. On the NW. corner a bank of natural shale had been revetted by squared boulders, on top of which was a dry stone wall with the burned paving of a hearth behind. Associated pottery was mainly of the 17th-18th century. A trial on the N. edge of the garth produced wall footings and sherds of the 17th-18th century.

Removal of the stones around the central hearth revealed a rounded re-used stone with a lightly incised design of four petalled (?)roses on one side.

LEBBERSTON, N.R. (TA 074829) In 1972 R. A. Varley recovered 13th-14th-century pottery including part of an ovoid type jug, with a strap handle with grooves, of Humber ware, also Scarborough ware. Retained by the finder.

MARISHES, BELLIFAX GRANGE, N.R. (SE 803786) T. Dodsworth reports the finding of late medieval pottery, including jugs, one ribbed externally and a green-glazed dish or plate.

NORTH RIGTON, W.R. (SE 297496) Fieldwork near *New York Farm* by Miss E. M. Holt has located a small bloomery. A trial trench in dense slag spread over a ploughed field revealed a hearth whose stones had been primarily used in connection with a furnace. The hearth was sealed by dense slag mixed with a few sherds of East Pennine Gritty Ware of the 14th century. Fieldwork in the area suggests iron-working in the Middle Ages, though no dating evidence is yet available. Work is in progress on documentary evidence.

——, (SE 283513) Fieldwork by Miss E. M. Holt has located a spread of slag at *Fairview Farm, Brackenthwaite*. A trial trench revealed a modern rubbish pit and a scatter of fired stones resting on the natural. A large quantity of slag was recovered but no actual evidence of working; a few small abraded sherds of 13th-14th century pottery was recovered. The slag has been identified by H. F. Cleere as bloomery tap-slag.

OSBALDWICK, N.R. (SE 632532) See Roman section.

POCKLEY, POCKLEY MOOR, N.R. (SE 612930) R. H. Hayes reports an iron-slag heap and old moorcoal pits at *Cinderhill Wath* shown on the 6 in. O.S. map. To the NW. at SE 609932 another slag heap is now ploughed down in a moor intake.

SANDAL MAGNA, SANDAL CASTLE, W.R. (SE 338182) The whole area of the inner moat was excavated by P. Mayes and K. Stubbs for Sandal Castle Joint Excavation Committee and a well-stratified sequence of materials was found. Of singular interest is a large group of industrial ceramics and glass of *c.* 1400. The moat contemporary with the castle's timber phases was excavated and the extended internal moat system of the 13th century was fully examined. All indications point to relatively continuous building activity from *c.* 1200 to *c.* 1270. Generous grants have allowed most of the site to be cleaned and grassed for final presentation.

SCARBOROUGH, N.R. (TA 047887) During the digging of foundations at *Sandside* in 1970, part of a 13th-century cooking-pot of outcurved rim type, a base of a 14th-century Scarborough-ware baluster-like jug, with a sagging base decorated with thumb prints, and a 16th-century Cistercian-ware cup of type 4A were recovered from a depth of 1·2m to 1·5m by R. A. Varley. Finds now in the Scarborough Museum.

SHEFFIELD, W.R. (SK 375865) A fifth season of excavation was carried out at *Sheffield Manor* by Miss P. Beswick for Sheffield Ctiy Museums, concentrating on the Outer Courtyard. The main discovery made was the footings of a 0·6m wide masonry wall, 24m long running at right angles to the W. front of the Manor, and to the S. of the entrance road. At the furthest W. point the wall terminated in the foundations of a 2·1m square, stone-flagged building, from the S. side of which 0·6m wide wall footings continued southwards. The latter had been cut by the foundations of a semi-circular stone structure, added to the S. side of the building. Finds of window glass and pottery of 16th-17th century date related these structures to the main period of Manor building and occupation. To the N. of the entrance road were the padstones and a cobbled floor of 18th-century farm buildings.

SHELLY WOODHOUSE, W.R. (SE 218108) A 15th-century single-aisled hall was recorded by the R.C.H.M. and the Medieval Section of the Y.A.S. The building consisted of a service bay, a two-bay hall and a solar bay almost entirely removed by a 17th-century cross-wing. The apparent remains of the screen survived and evidence was found for a coved canopy over a dais flanked by a low side-screen on the aisle side (*cf.* Thornhill Lees Hall, *Yorks. Arch. Journ.* 43 (1971) pp. 112–27). The frame and rafters have been dismantled and are to be re-erected at the Avoncroft Museum of Buildings, Stoke Prior, Worcestershire.

SKELTON IN CLEVELAND, N.R. (NZ 652187) Excavation by B. C. Martin and the Guisborough and District Arch. Soc. in field O.S. 485 confirms occupation from the 14th to the early 17th century. The covered drain [*Register* 1971 p. 224] was traced N. for 5m, to a shallow soak-away. A further drain running N. from the soak-away was covered by roughly cobbled areas of which 15 sq. metres have so far been exposed. Pottery is mostly of 15th-century date, with animal bones and patches of wood ash.

THIRLBY, N.R. (SE 492841) The Yorkshire Museum reports the discovery of medieval pottery wasters from the filling of a drainage ditch. A survey by C. V. Bellamy confirms the presence of at least one kiln in the area.

TOLLESBY, N.R. (NZ 511157) The threatened Deserted village site, marked by house platforms on either side of Tollesby Lane, was excavated by F. A. Aberg for the Dorman Museum and the Department of the Environment. Two houses within a yard had been abandoned late in the 16th century; another had been built at this time and demolished about 1800, although an earlier structure may have lain beneath it. Time prevented more than a trial on a third platform, showing a house existed. Early occupation in the village was suggested by 11th/12th-century pottery and some sherds and a glass bead perhaps of Saxon date in the ditch surrounding the first pair of houses.

WHARRAM PERCY, E.R. (SE 858643) Work [see *Register* 1971 p. 225] by J. G. Hurst for the D.M.V.R.G. and the Department of the Environment was carried out on three new sites.

Excavation W. of the church failed to find an early tower. The cemetery filled the area between the church and the hillside. 168 burials in three layers were lifted for examination.

The S. mill dam had a medieval core built of alternate layers of soil and rubble. The pond side had been faced with ashlar on a different line in the 18th century and made into a sheepwash in the 19th century.

A 6m length of chalk-built 14th-century 0·9m wide wall of the vicarage was found. When the vicarage was moved further north in the 16th century, the area was covered by outbuildings. A clay-lined brick channel brought water to the vicarage from the springs further S. in the valley.

Further sections across the W. boundaries located a complex of Iron Age and medieval ditches.

WHITBY, CARR HILL, N.R. (NZ 873088) Medieval sherds from *Carr Hill* have been given to J. Rushton. They include two internally-glazed sherds and bases, rims with lid seats and a body sherd of decorated Cistercian ware.

YORK (SE 597527) See Roman section.

POST-MEDIEVAL

*Photographic pre-demolition surveys by S. W. Feather for Bradford Industrial Museum marked thus *.*

ADDINGHAM, W.R. (SE 082502)* *Low Mill, Addingham*, built 1787.

BRADFORD, W.R. (SE 171326)* *Adolphus Street Station.*

—— (SE 165338)* Lead chamber sulphuric acid plant at Messrs. Leathers Chemical Company Ltd., *Canal Road, Bradford.*

——* Sections of the *Bierley, Bowling and Low Moor Ironworks* tramways, including a tramway tunnel under *Wakefield Road.*

—— (SE 158331)* Former flyer and spindle maker's workshop at *Messrs. Clapham Smith and Son, Thornton Road* (before closure). All early machinery was removed to Bradford Industrial Museum.

BRIERLEY, W.R. (SE 170285)* Sulphuric Acid plant on site of *Brierley Ironworks.*

COMMONDALE, N.R. (NZ 653106 to 654107) Pannier paving located by R. H. Hayes, J. Muir and J. G. Rutter runs to a double stone slab bridge at *Whiteley Beck*. More ran from 663104 to 672105.

EASINGTON, BOULBY ALUM WORKS, N.R. (NZ 752197) Completion of excavation by S. K. Chapman at the Blacksmith's building recovered metalwork from tramways among the scrap.

—— (NZ 762191) Four large alum liquor storage cisterns were recorded at the *Alum House* site before clearance. An adjacent building was probably used for boiling, and furnace bricks *in situ* were of 19th-century origin.

DONCASTER, W.R. (SE 575035) Limited excavations within a tenement fronting on the *Market Place* showed buildings and yards dating from the 15th to the 19th century. The 16th and 17th-century pottery included imports. Two large brick 16th-century bread ovens correspond with the name 'Baxter Gate'.

GLAISDALE, N.R. (NZ 732032) A length of pannier paving stones *c.* 1m wide running NE.-SW. towards the 1082 ft. O.S. datum on *Glaisdale Rigg* has been located by F. Hall and the late G. Harland.

——, HARDHILL GILL, N.R. (NZ 736030) A ruin at *Doubting Castle* has been pointed out to R. H. Hayes by F. Hall. It is 14m by 5·4m with fireplaces and two salt boxes in the gable ends. It was divided into two cottages during the 19th century and later used as a barn, the thatch remaining on the roof until 1939–40; there is no land attached to the cottage. A pannier way leads from the cottage to *Common Loaning.*

HALIFAX, OVENDEN, WHITE HALL, W.R. See Medieval section.

KELK, LITTLE KELK, E.R. (TA 093604) 16th-17th-century pottery from a kiln site was collected from a ploughed field in 1970–1 by R. A. Varley. The pottery is now in Scarborough Museum. See *Y.A.J.* 43 (1971) p. 196.

KIRKBY MOORSIDE, OXCROFT ESTATE (SE 699863) R. H. Hayes reports the finding of a silver shilling of Charles I.

LASTINGHAM, DAISY FARM, N.R. (SE 727904) Medieval sherds have been picked up by H. Frank from the Benedictine monastery site, now a ploughed paddock W. of the house and adjacent to the churchyard. It included green sherds of jugs and bowls, and some unglazed cooking pots. The glazed sherds showed glaze run on the fractures, and the lug from a chafing dish. Several 'bungs' were found in a neighbouring garden, especially from under the footings of a stone shed. A 16th-17th-century kiln is suggested.

MIDDLESTOWN, W.R. (SE 257165) Redevelopment in the *Wragg Hill* and *Overton Lodge* area has shown small hearths scattered over the hillsides of this medieval and later iron working area of 8 sites examined by K. S. Bartlett; one small hearth produced pottery dating 1550–1600 with a piece of Bellarmine; samples of various deposits were taken.

PATELEY BRIDGE, GLASSHOUSES, W.R. (SE 172644)* Former hemp spinning mill of Messrs. Frederick Atkinson (Hemp Spinners) Ltd., Glasshouses Mill prior to change of use. A water-wheel governor of *c.* 1850 and hemp spinning machines were removed to Bradford Industrial Museum.

PONTEFRACT, W.R. (SE 462218) E. Houlder and M. Leach report from infra-red air photography a Civil War siege work connected with the Siege of Pontefract Castle. A site in the area was suggested by documentary evidence; see *Pontefract and Dist. Arch. Journ.* 1974.

RILSTON, W.R. (SD 971572) A rectangular-tower 'Scotch' kiln was excavated by Dr. A. Raistrick at *Tilery Hill*; a sunken road leads to it from fell-edge collieries. It had three flues with grates on two opposite sides, was built with local bricks made on the spot, and measured internally 3m by 2·1m with 0·92m walls. Nearby are old clay-pits dug into the boulder clay, and an adjacent (?)preparation floor. Land drainage tiles 10·2cm by 7·6cm and 21·5cm long were found in quantity in various states of manufacture. These were used in the drainage of rough common and waste land enclosed in 1790 and up to 1830, possibly suggesting a date for the kiln. No tradition of the kiln beyond the name Tilery Hill is known. The material is in the Craven Museum, Skipton.

SKIPTON, EMBSAY (SE 003543)* *Spindle Mill, Embsay*, before closure.

STOCKSBRIDGE, W.R. (SK 266980) Excavation was completed at *Pot House Farm* by D. Ashurst and the Barnsley Archaeological and Historical Society on the site of a 17th-18th century glasshouse and 18th-19th century pottery [*Y.A.J.* XLII (1969) p. 246]. Glass includes clear and coloured tableware, some with opaque applied decoration, bottle and window glass. The pottery made only red-fabric dishes and bowls with yellow and brown slip decoration, with flower patterns and combing. The flues, hearth, and outbuildings were excavated. The main hearth was located in the furnace building, which was not available for excavation as it is now a barn.

WESTERDALE, N.R. (NZ 659065) R. H. Hayes reports post-medieval sherds found after ploughing on the site of the *Sheep House* foundations, which were visible in places running E.-W. The site dates to the 18th-19th century.

AERIAL RECONNAISSANCE AND INTERPRETATION

CHECK-LIST OF DITCHED SQUARES: NW. AREA OF E. RIDING

(from inspection of Air Photographs)

by H. G. Ramm

As a result of work by Dr. I. M. Stead burials under mounds surrounded by a ditch, square in plan, are a well-known feature of the East Yorkshire Iron Age. Their crop-marks are easily recognisable from the air, and recent work by the York staff of the Royal Commission on Historical Monuments has shown them to be far more common than previously thought. To illustrate this frequency and distribution it is proposed to publish a check-list of those so far discovered, and the first instalment covers the NW. area of the East Riding, E. of the Derwent and N. of the Stamford Bridge-Sledmere road, corresponding to the old wapentake of Buckrose. Within this area there are no squares recorded between the Derwent and the Wold escarpment, although N. of the escarpment there are important concentrations at Norton and Rillington, and others recorded from drier areas within the Carrs of the Vale of Pickering. On the Wolds apart from a large group at Luttons the squares occur in ones and twos or in small groups of 5–15, and the large cemeteries, often running into hundreds of squares, found further E., e.g. at Rudston and Cornaby, are not found here.

The list is arranged alphabetically by parishes; air photographs are prefixed by a number according to their source—(1) R.A.F. verticals; (2) Cambridge University; (3) National Monuments Record; (4) Ordnance Survey. All Grid References are in 100km. square SE.

BIRDSALL
N. Grimston, 83196702, 83226712, 83376708, a group of 3, *c.* 10m, amongst ditches of R-B field system; (2) BCG 36; DQ 17.
Glebe Farm, 82686716, 82616718, 82676724, a group of 1 square and 2 rings, 10m (rings 10m and 15m), overlaid by ditches of R-B settlement; (2) DQ 13, 14; AGF 6.
Aldro, 80236310, single square, 12·3m, attached to linear ditch; (4) 67/339, 112.

COTTAM
Cowlam, Wood Dale, 95626481, 95656482, two, 10–12m, one on each side of and parallel to a linear ditch; (2) ARM 39.
Cowlam, SW. of Borough House, 97936673, 97786668, 97496658, 3 squares related to an E-W. linear ditch, to which 2 are attached, 10–15m, possible central pits; (2) AXH 70–71, (3) 9766/3, 236–41.
Cowlam, W. of Borough House, centred on 97676686, 5 squares uncertainly barrows and of uncertain relationship to ditches of a settlement, *c.* 20m, no central pits; (2) AXH 70–7, (3) 9766/3, 236–40.
Cowlam, SE. of Borough House, 98346671–98356681, a group of at least 7, of which 5 were excavated by Greenwell (finds included the Cowlam Brooch, 4th century B.C.), 6 by I. M. Stead (1969, 1972); air photographs suggest 6 in addition, but these were not verified by excavation in 1972 although a possible burial without ditches was found on the site of one. One is cut by a double dike. 10–18m; (2) AXH 74–5, (3) 4866/1, 244–8.
Cowlam, N.E. of Borough House, 98486756, single square, *c.* 7m; (3) 9766/1, 266.
Low Barn, 98366370, single square, 9m, parallel to linear ditch; (3) 9663/1.

FIMBER
Towthorpe Plantation, 89156424–89246421, 4 squares and 3 rings, two squares are conjoined, three have central pits, 8–9m; (1) F21 543/RAF/397, 0198. Part of a small cemetery of which the rest is in Kirby Grindalythe.
N. of Fimber Village, 89326111–89396115, 4 within a partially visible rectilinear enclosure, two have central pits, 8–10m; (1) 106G/UK/1313, 4420.
Scales, 89756107 single square, 6m; (2) AZA75.
Blealands Nook, 91955778–92005986, 3 rings and 1 square in line, the square and two rings 9m, other ring 18·8m; Mortimer (*Forty Years,* 195–7) excavated a cemetery of crouched inhumations, but he also found cremations. An R-B settlement site cuts some of the features; (2) ACS94–5; AKB 16–18.

HESLERTON
W. Heslerton Carr, 89357836–89547831, 14 squares, 2 rings, no central pits, 5–20m; (2) BDY 92.
W. Heslerton Carr, 90277808–90517818, 15 squares, 1 ring, 2 pairs of squares are contiguous, two only with central pits, 5–15m; (2) BDY 87–90.
E. Heslerton Carr, 91627835–91767844, 16 squares, 2 rings, many with central pits, cut by ditches of field system, squares 8–10m, rings 15 and 20m; (2) BDY 84–6.

KIRBY GRINDALYTHE
Duggleby Wold, 87426905–87466904, group of 3, 6–7·5m, one with central pit; (3) 8769/1, 38.
High Mowthorpe Farm, 88296889–88406886, group of 7, 4–8m, one with central pit; (3) 8868/2, 31.
Towthorpe Plantation (see also Fimber), 88736440–88846445, 6 squares and 1 ring, 4–9m, 3 with central pits; (1) F21 543/RAF/397, 0199; 106G/UK/1313, 4307–8.
Thirkleby, 91816837, single square, 7·5m; (2) BCG 44.
Thirkleby Wold, 92786764–93216752, 13 squares and 2 rings, 2–10·5m, one contiguous pair crossed by ditch of field system; (3) 9267/2, 409–12.

KIRBY UNDERDALE
Garrowby Wold, 80855695–80985678, group of 4, S. of and including Mortimer barrow 63 (*Forty Years* p. 142) where the square ditch must relate to the secondary central inhumation and not to the primary burial with Food vessel; (4) 67/339, 258.

LANGTON
Whin Fields, 82016700–82036702, 4 squares, 10m, with central pits, and a pentagonal enclosure, 30m on longest axis, also with central pit; (3) 8267/2, 276.

LEAVENING
(See also *Birdsall* (*Aldro*)), 79856302, single square attached to linear ditch, 14m, mound marked on 6 inch O.S. (old series), excavated Mortimer (*Forty Years* no. 49 p. 79), contracted inhumation, flints, and sherds; (3) 7962/1, 369–71; (4) 67/339, 112.

LUTTONS
Centred on 94587148, 40–50 squares, arranged roughly in E–W. rows, 5–15m, many with central pits, adjacent to a pit alignment; (2) BCG 52, BEF 90; (3) 9471/2, 153–4; /3, 155–8.
Pasture Cottages, 96966770, 97146781, 97196779, 3 scattered squares, 10–15m; (3) 9767/1, 300–2.

NORTON
Sutton, 79367061, 79387066, 79427068, 2 squares and a ring, 8–15m, one square overlaid by Roman road, the other cut by the ditch of a Roman enclosure.
N. of Norton Howe, 80087031–80127047–80587040–80287024, at least 26 squares with central pits, 2 rings, and many (?) burial pits without surrounding ditches, partly overlaid by linear fields, 2·8–8·8m, on low lying ground; (2) AYE 4: AZA 89–90 (3) 8070/1, 413: /2, 414–5.
Low Field, 81257053–81327052, group of 9, 7 with central pits, one attached to the ditch of a field system, 6·5–9·8m.

RILLINGTON
West Moor Lane, 84157411–84167411, group of 3, under 10m, central pits, cut by R-B field ditches; (3) 8474/3, 84–5.
West Field, 85217399–85477398, 11 squares, some with central pits, see also *Thorpe Basset*; (3) 8474/1, 242–4: 8573/1–3, 238–41; 8574/1–2, 250–3; /3, 256–7. (Pot from 1A burial at 85107418 in Yorkshire Museum.)
East Field, 85687452–85967419, 37 squares and 6 rings, 1·5–22m, 19 with central pits, some cut by R-B ditches; (3) 8574/1–2, 250–3; /3, 256–7; /7–13, 65–81.

SCAMPSTON
The Firs, 84357728–84657735, 12 squares and 2 rings, 3·5–11m, no central pits; (3) 8477/1–5, 230–7.
Golden Square, Knapton, 88677774, 88827763, 88847779, ring, 15m, and 2 squares, 7–7·5m, no central pits; (3) 8877/3, 215–7.
Knapton Ings-Duffield Bridge, 87977849–88357822, 4 scattered squares, 3–5·5m, 3 with central pits; (3) 8778/1–2, 219–21; 8878/1–2, 211–18.
Knapton Wold, 89437422–90127463, small group, 10–15m, no pits; (2) AUT 37–40; (3) 8974/1–2, 198–201; 9074/1, 202–3.

SETTRINGTON
Moor Lane, 82257099, line of 4, 6–9m, with central pits; (3) 8270/3–4, 431–2.
Brough Hill, 82606998, single square, 4·5m, between but not aligned with the ditches of an R-B track; hollow-way within the ditches bending to avoid them; (3) 8270/5–8, 436–441.
Hall Field, 82886900, single square, 10m; (2) DQ 20.
S. of Town Green, 82977055, single square, 10m; (3) 8270/13, 12.

SHERBURN
Prodham's Wold, 95847539–95917535, line of 7 overlapping rings, 10–15m, of which two are overlapped by a square, 7m, with central pit; (4) 67/215, 211.
Simon Howe, 97487530, single square, 6·3m, no central pit; (4) 67/215, 210.

THIXENDALE
80536171, single square, 7·5m; (1) F21 543/RAF/397, 0184: (4) 67/339, 116.

THORPE BASSET
85547377, two squares, 10m; see *Rillington West Field* for adjacent squares and A.P. nos.
Blenkins, 86047173, 86087165, 86097167, three squares, 10m; (3) 8671/1, 263–4.

WEAVERTHORPE
Dales Farm, 95827281, single square, 12m; (2) AYE 15, 16; AUT 63. (3) 9572/1, 146–50.

WHARRAM
Toisland, 83656342, single square, under 10m; (2) BEF 88.
N. of Wharram Percy, 85956467–85966468, group of 3, 4·5–7·5m; (2) AQT 64.

WINTRINGHAM
S. of Village, 88127299, centre of group of at least 6 squares, 2–10m, all within rectilinear enclosure ditch; (3) 8873/1, 83.
Deep Dale, 88957370, two squares, 10m, associated with dike; (1) 106 G/UK/1313, 4325.
Linton Wold, 905713, at least 12 squares, 2–15m, none with central pits; (2) BCG 42–3.

Recent air cover has not yet been searched for Sledmere, Thixendale, Weaverthorpe, Wharram, and Wintringham.

AERIAL RECONNAISANCE OF THE WEST RIDING MAGNESIAN LIMESTONE COUNTRY

by D. N. Riley

During preliminary flights in Yorkshire in 1971 several interesting cropmarks were seen on the limestone country between Doncaster and Wetherby. The area was examined in detail in July and August 1972 and photographs taken of a considerable number of early sites revealed by cropmarks, although the marks lacked contrast because of the wet weather in June. Much more should be seen in a dry summer to add to the map (see Fig. 1) of archaeological sites found from the air.

The work was done mainly by the writer, flying with W. G. Edwards, but several valuable flights were also made by J. Pickering. The following notes mention in addition certain sites recorded in previous years by Dr. J. K. St. Joseph and shown on photographs in the Cambridge University collection.

In most cases the early site is best described by the overworked word 'enclosure', that is, an area of land surrounded by a ditch, which makes a cropmark.

Rectangular or sub-rectangular enclosures were relatively frequent. Their size was variable but could often be compared to that of a large garden and it is possible that the ditches shown by the cropmarks had formerly surrounded early farms or folds for livestock. The following were photographed:

Parish	*Map Ref.*	
Bardsey cum Rigton	SE 382433	Only part visible; rest under unsuitable crop but should appear another year.
Wothersome	SE 408429	
Bramham	SE 450418	Prominent square mark.
Aberford	SE 418403	Elongated shape, only part visible. Smaller enclosure near.
,,	SE 429377	

Saxton	SE 480365	
Ledsham	SE 458302	Long ditch attached to the enclosure.
Cridling Stubbs	SE 510225	Only part visible.
Kirk Smeaton	SE 503171	Above the steep edge of the Went valley.
,, ,,	SE 510154	
,, ,,	SE 514154	The enclosure is beside the end of a lane or droveway which has a ditch on each side.
Norton	SE 520160	Beside a similar lane which makes a right-angle bend. Possible field boundaries adjacent.
,,	SE 514140	Cropmarks faint.
,,	SE 526136	Large enclosure with subdivisions, approached from the south-west by a lane.
Hampole	SE 509127	Very small.
,,	SE 507129	Only part visible; rest under unsuitable crop.
,,	SE 503113	J. Pickering 1971 photograph.
,,	SE 509094	Two enclosures shown by faint cropmarks.
,,	SE 497091	J. Pickering 1972 photograph.
Brodsworth	SE 515086	Small subdivision at one corner.
North Elmsall	SE 496130	
Adwick le Street	SE 544065	Cambridge University photograph.
,, ,, ,,	SE 540063	Cambridge University photograph.
Marr	SE 504050	
,,	SE 506046	
,,	SE 498050	Cropmarks showed well. Lane near.

Round, D-shaped or irregular enclosures were found at a number of places. The size range was similar to that of the rectangular enclosures except for a very large oval at Marr.

Boston Spa	SE 412451	Only part visible; rest under unsuitable crop.
Bramham	SE 445430	
Aberford	SE 420403	Field boundaries also seen near.
Stutton	SE 466407	Pear-shaped enclosure apparently containing three small circles.
Saxton	SE 473363	Shape very irregular.
Huddlestone	SE 462331	
Darrington	SE 496197	Probable field boundaries near.
Hampole	SE 505123	Cropmarks indistinct.
Brodsworth	SE 496069	
Marr	SE 497057	Very large. Seen only in 1971 and did not reappear in 1972, though crops seemed suitable.
Armthorpe	SE 627033	Two enclosures known from Cambridge photographs, taken in previous years. Showed well in 1972.
Loversall	SK 593994 and SK 593996	Two enclosures, intersected by probable field boundaries.

Long ditch with straight-sided enclosures attached. Four similar sites may be grouped under this heading; the long ditch may have been part of a system of field boundaries.

Collingham	SE 408457	Enclosure has subdivision and annexe.
Aberford	SE 436385	
,,	SE 423377	
Little Smeaton	SE 511176	Two small rectangular enclosures, one with double ditch.

Enclosures with double ditches were rectangular or sub-rectangular in all cases except two and were again about the size of a large garden. The following isolated examples were noticed and others occurred in some of the enclosure complexes listed in a later section.

Saxton	SE 470366	Double on two sides only.
Sherburn in Elmet	SE 480345	Irregular shape.
Stapleton	SE 513193	
Kirk Smeaton	SE 510150	Only part visible. Seen best as a soilmark.
Hampole	SE 505115	J. Pickering 1971 photograph.
Norton	SE 523143	Part of round enclosure seen; rest in a wood.
Hooton Pagnell	SE 491058	Playing card shape, one corner not visible.

Quadruple ditched enclosure. In the valley of the Went, very near the river at SE 536158 in Little Smeaton parish, was seen a strongly defended site, which is recorded by both J. Pickering and Cambridge University photographs. The innermost ditch, sub-rectangular in shape is about 200 ft. across. Further indistinct cropmarks were seen to the west in 1972 and the area will repay further study.

All the above enclosure types are marked on the map (Figure 1) as 'isolated'.

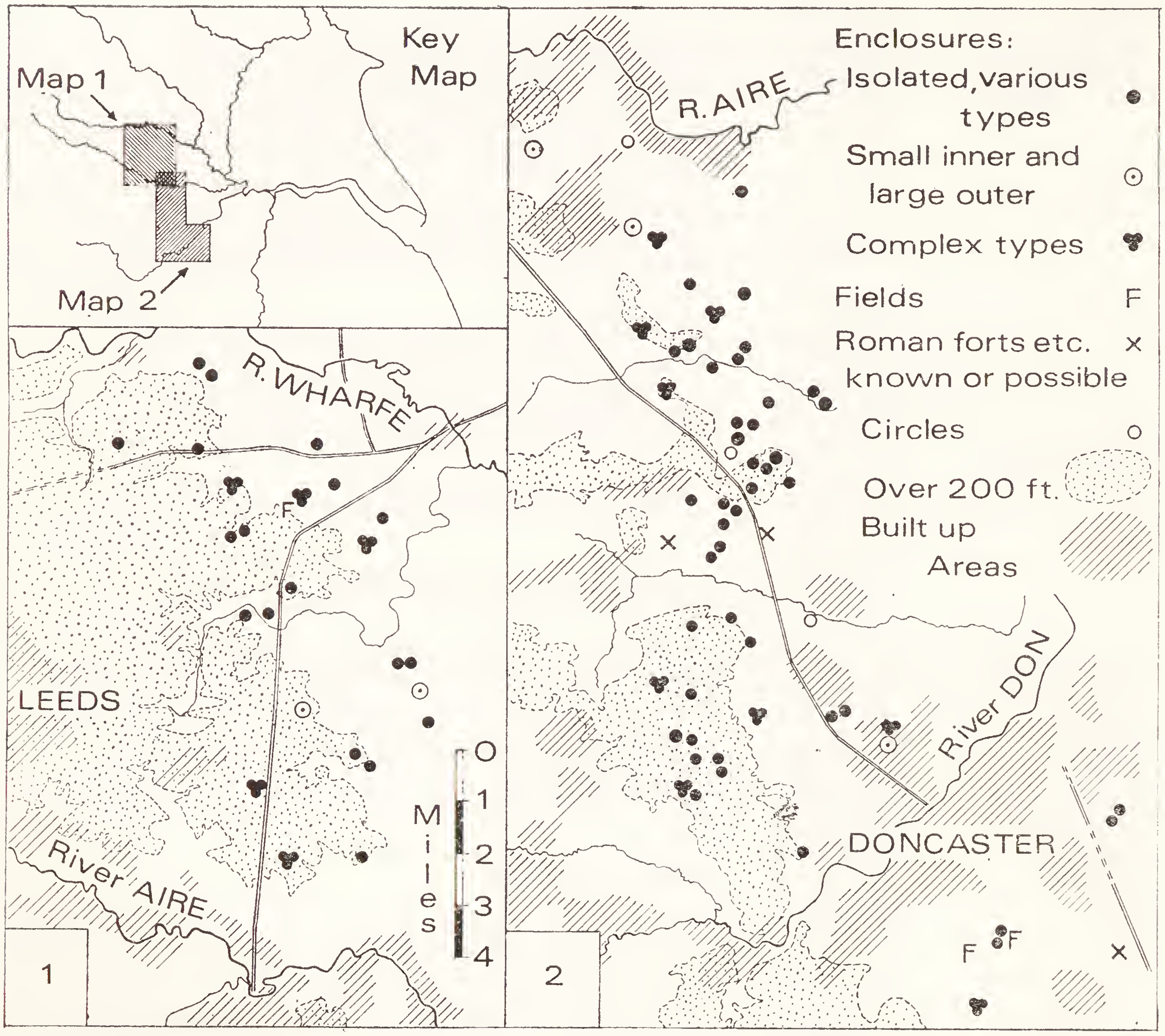

FIG. 1. Map showing early sites photographed from the air on the Magnesian Limestone country. The principal Roman roads are also shown.

Small enclosures within a much larger surrounding enclosure occurred at five interesting sites.

Sherburn in Elmet	SE 476355	Small enclosure in one corner of larger. Faint cropmarks.
Micklefield	SE 440348	Sub-rectangular inner and irregular outer. Traces of field boundaries attached.
Castleford	SE 444239	Polygonal shape. Cambridge University photograph.
Darrington	SE 476214	Sub-rectangular inner and rounded outer shape.
Bentley	SE 558057	Small ring within large outer ring. Illustrated by Dr. J. K. St. Joseph in *J.R.S.* xliii pl. xvi (no. 1) and land since built over.

Complex enclosure patterns were found at places in various parts of the area. In some cases, for example at Hickleton SE 490045, the site resembled a group of the rectangular enclosures which occur elsewhere in isolation; in other cases the cropmark showed a large enclosure with subdivisions or containing smaller enclosures, for example at Bramham SE 418419 and Ledston SE 435300. The following were photographed:

Bramham	SE 440414	
,,	SE 418419	Extensive complex on Well Hill within boundary ditch and apparently approached by a lane.
Stutton	SE 460400	Unusually regular and straight sided.
Garforth	SE 426325	Interpretation confused by cropmarks on cracks in the limestone.
Ledston	SE 435300	Irregular shaped enclosure with subdivisions and approached from the south by a long lane. Partly covered by a wood.

Darrington	SE 483207 to SE 483210	On both sides of modern road.
,,	SE 479182 to SE 479184	Large rectangular enclosure, partly double ditched, at edge of steep hillside. To north group of enclosures.
Stapleton	SE 502188	
,,	SE 490175 to SE 495178	Long double ditch, beside which, to the west of the modern A1 road, an oval enclosure, and to the east, a double ditched rectangle.
Thorpe Audlin	SE 486163	Site partly covered by a wood.
Hooton Pagnell	SE 484074	
Brodsworth	SE 516065	Cropmarks faint.
Hickleton	SE 490045 to SE 494040	At brink of Barnburgh Edge. Probable field boundaries to the north.
Wadworth	SK 586973	Irregular shaped enclosure with annexe. Rectangular enclosure a short distance away.

A complex of rectangular enclosures also shows at Bentley SE 558057 on the published photograph by Dr. J. K. St. Joseph referred to earlier.

Field boundaries. Extensive cropmarks which may show the boundaries of early fields were widely distributed.

North Deighton	SE 385507	Lane with field boundaries at right-angles.
Linton	SE 377473	Irregular shaped fields traversed by lane.
Bramham	SE 435412	Large rectangular fields. The area was cut by a pipeline in 1972 and the boundary ditches were seen to be large, about 15–20 ft. wide and 2–3 ft. deep.
Castleford	SE 445262	Cambridge University photograph.
Bentley	SE 542060	Cambridge University photograph; interpretation confused by cracks in limestone.
Loversall	SK 582992	
,,	SK 593995	Boundaries intersect two enclosures (see list of round, D-shaped, etc. enclosures).

Roman military stations. Observations of known forts illustrated the variable way in which cropmarks appear from year to year, because the Newton Kyme fort was not seen in 1972, although crops looked suitable. The fort at Rossington showed well in 1971, but poorly in 1972. Possible new sites were photographed at:

South Elmsall	SE 489118	Rounded corner and part of side of enclosure with some resemblance to the shape of a marching camp.
Burghwallis	SE 519120	Possible fort, previously photographed by M. Dolby.

Circles of a type resembling the ditches of destroyed barrows were seen near the Ferrybridge henge, though the henge itself was barely visible, and at two other places.

Ferrybridge	SE 472243	Two circles.
Kirk Smeaton	SE 509145	Three small circles.
Adwick le Street	SE 535093	Large circle.

Among *miscellaneous* places photographed, the Roman road at SE 437396 near Bramham cross-roads was recorded as a soilmark. At this point it leaves the line of the modern main road and runs through cultivated land, where the soilmark indicates current damage by the plough. This road is part of the Doncaster to York route, which runs up the magnesian limestone and, together with certain other lengths of Roman road, is marked on the map (Figure 1).

This brief progress report describes work done under the auspices of the Society's Aerial Archaeology Committee and acknowledgement must be made for the financial help received from the Committee in 1971 and to Kodak Ltd. for a Kodak Award, which covered most 1972 costs.

Prints of the photographs will be deposited in the Society's library at Claremont.

ARCHIVAL AND BIBLIOGRAPHICAL NOTES; BOOK REVIEWS

ARCHIVE NOTES

By D. J. H. Michelmore

Charities records: Tancred's Foundation,[1] Ledsham School and the Countess of Westmorland's Sharlston charity.

The society's most notable accession in 1972 was the records of Tancred's Foundation (DD 160). Created by the eccentric Christopher Tancred of Whixley (died 1754) under a settlement of 1721 and his will of 1746, this charity was established by a decree in Chancery of 1757. The charity provided twelve studentships, four in divinity, four in physic and four in common law, and created a hospital for twelve decayed gentlemen, clergymen and army or naval officers in Whixley Hall. The hospital was dissolved in 1872, partly owing to the misbehaviour of its inmates, an Act being passed to allow the substitution of twelve out-pensioners in place of the twelve resident pensioners. The records of the charity include proceedings, 1762–1956, a register of students (1762–1879) and pensioners (1762–1881), orders and regulations, 1762–1939, and accounts, 1875–1955.

Records already in the society's custody relate to smaller eighteenth-century charities. Ledsham School, founded in 1738 by Lady Elizabeth Hastings, provided an education for twenty girls of the sort that would make good servants, preference being given to orphans. Its records (DD 112) include a register of pupils, 1749–1949, accounts (including those for building the school), 1739–1874, and vouchers, 1740–1803.

The records of the Sharlston charity (MD 328), founded by Katherine, Countess of Westmorland, by her will of 1727, are unfortunately less complete, consisting of a bound volume of 231 duplicate apprenticeship indentures, 1731–1836. The charity was founded to provide apprenticeships for four boys or girls, but by the middle of the nineteenth century it appears that there were insufficient children to be apprenticed and in 1862 the unexpended accumulation of funds was applied to the expense of erecting a school, the income thereafter being paid into the general account of the national school at Sharlston.[2]

YORKSHIRE PERIODICALS 1972

compiled By Audrey N. Gilroy

This bibliography contains entries for periodicals and record series published in Yorkshire. Periodicals containing no material of historical interest, e.g. *Yorkshire Architect,* have been omitted, but periodicals covering the whole North of England but which normally contain Yorkshire material have been included, as have articles published in annual reports.

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[1] The Society is indebted to Mr. S. J. Mosley, Clerk, and the Trustees of Tancred's Foundation, for depositing these records, and to Professor D. G. Kendall for arranging the deposit and for listing the records.

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YORKSHIRE PHILOSOPHICAL SOCIETY, *Annual Report,* 1972 (for 1971)—

'Archaeology in York, 1971', compiled by the York Excavation Group. 'York's weather, 1971', by William Baines. 'The Yorkshire Museum, 1971: [accessions]', by E. Blank, C. Simms and B. J. Pyrah. 'The Anglian tower', by Herman Ramm. ' "Museums and Man": Herbert Read lecture', by John Jacob. 'Scrapbook for York, 1822', by A. Owen. 'The scientific significance of the Kirkdale Cave hyaenas', by Patrick J. Boylan. 'James Atkinson, surgeon, 1759–1839', by Margaret C. Barnet. 'Biographical notes on William Venables Vernon Harcourt (1789–1871), a founder of the Yorkshire Philosophical Society', by A. Owen. 'Charles Wellbeloved', by A. J. Peacock. 'John Philips and the Yorkshire Philosophical Society', by A. D. Orange. 'The first fifty years of [the] Museum Gardens', by J. A. Hingston. 'The Yorkshire Philosophical Society and archaeology, 1822–55', by Herman Ramm. 'Meteorology: the first fifty years', by William Baines. 'The Yorkshire Philosophical Society and photography', by J. Rendel Ridges. 'The collections of the Yorkshire Museum', by Allen Butterworth. 'Towards a history of natural history collections at the Yorkshire Museum', by C. Simms. 'The mythical Norman element in the 1882 Bishophill (York) find of Anglo-Saxon coins', by Michael Dolley. 'Further notes on coins from the Bishophill (York) find of 1882', by Elizabeth Pirie. 'Recollections: the Yorkshire Philosophical Society, 1900–1914', by E. Wilfred Taylor.

BOOK REVIEWS[1]

M. W. Beresford and J. G. Hurst (Eds.); *Deserted Medieval Villages: Studies*, Lutterworth, 1971. xviii + 340 pp., 31 plates, 42 figs., £8.00.

This is a somewhat belated review of a book already on its second impression, late in 1972. This latter point is in itself some comment on its worth and an indication that its reception has surprised even this enterprising publisher who, it will be remembered, produced Professor Beresford's monograph, *The Lost Villages of England* in 1954, at a time when a book in the field of medieval archaeology was a risk indeed. This new volume is a worthy sequel, and this is one occasion when a reviewer's complaint about high book prices is muted. This is not a volume only for library purchasers: it deserves serious consideration by the individual buyer.

The text is made up of a series of essays. The first 228 pages are devoted to desertion of medieval settlements in England; in the six sections in this part Professor Beresford reviews the progress of historical research and in a second essay assesses the archaeological evidence from the historian's standpoint. Placed between these are Mr. Hurst's review of archaeological work up to 1968, and his gazetteer of excavated sites. The English section is completed with Dr. Sheail's Gazetteer of known deserted village sites and Mr. Hurst's bibliography. Then follow three comparatively short sections: on Scotland, by Messrs. Fairhurst and Dunbar, Wales by Dr. Butler, and Ireland by Dr. Glasscock. The apparatus for these sections is inconsistent, there being a bibliography and a provisional site-list for Ireland, a bibliography and a gazetteer of excavated sites for Wales, and only a bibliography for Scotland.

The Beresford-Hurst contributions make it clear that distinct changes in emphasis have taken place since 1954. The original object was largely to explain the phenomenon of the sites of deserted settlements then still commonly to be seen in parts of the English landscape. What the documentary record left unanswered was to be filled in by site work, and the object of many subsequent excavations was to establish the chronology of shrinkage and eventual abandonment. However for contrasting reasons the field has broadened. Now although the question of the chronology of individual cases remains, the concerns are in some ways wider, in some senses narrower. It is clear that the picture of medieval settlement, fossilised at desertion and frequently undisturbed thereafter, gives an unmatched opportunity to examine many of the key features of rural life before the great changes of the 16th and 17th centuries. It could be said that these studies are really of the medieval village, desertion being an incidental and helpful circumstance. However, this change in stress is a retreat as well as an advance, for it became clear in the fifties and early sixties that excavation was rarely to fulfill the theoretical object, of establishing the chronology of abandonment of a village as a whole. Work at Wharram Percy, in particular, showed that the unexpected complexity of peasant-house sites, with structures replaced on different alignments as frequently as thrice per century, meant slow work on the ground. At Wharram only 2 houses have been completely excavated, apart from the church and the early manor house. It is clearly unwise to draw conclusions about expansion and decline of a settlement from such a small sample, and the lack of funds available for research excavation makes it unlikely that this problem will be solved in the foreseeable future. There are occasions, such as at Seacourt, Berkshire, where a conspectus of much of a village has been gained partly by excavation but also by observation of earthmoving during later development.

The production of the volume is of a high standard. Most of the photographs have never before appeared in print and serve their purpose well. The figures are perhaps less well done, there being some unnecessarily drastic reduction, given the ample page-size available, and judicious redrawing and re-lettering would have made certain maps more easily understood (fig. 9 and some of the Scottish maps are examples). The pages of house plans (e.g. figs. 19, 20, 21) suffer from grouped captions; an identifying place-name next to each plan would be helpful; Fig. 37 indeed, has the key on the opposite page. The indexing and the gazetteers are good.

There is always a problem with a continuing research project of the kind the Deserted Medieval Village Research Group has set itself: a tendency to postpone publication out of fear that a survey will be out of date when it reaches print. But to heed this means that the archaeological public receives no picture of achievements, so a 3-year old view is far better than nothing at all. And great progress has indeed been made: there is a heartening record of excavation, and at last key sites are beginning to come into the guardianship of the Department of the Environment. But the book comes at a time appropriate to draw attention to the problems of accelerated destruction, which finance available for emergency excavation cannot match, and also to the depressing absence of the funds the DMVRG so badly needs for documentary research and for the organisation which would make its work more effective. One can only hope that some of those bodies who have refused grants in the past will be persuaded by this book of the worth of the scheme of work and the wealth of achievement so far.

David Crossley

R. Welldon Finn, *The Making and Limitations of the Yorkshire Domesday*, York: Borthwick Institute of Historical Research: Borthwick Papers No. 41, 1972, pp. 31, 30p.

The scope of this paper is clearly indicated by the headings of the sections into which it is divided. The first half deals with more general topics – The Limitations of the Material, The Material and Its

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[1] The Editor wishes it to be understood that any opinions expressed in a review are those of the reviewer alone, to whom any resulting correspondence should be addressed.

Organisation, The Returns and the Work of the Clerks, Parallel Entries – and the second with some of the particular sections into which the Yorkshire Domesday material was itself divided – The Summary, Clamores de Eurvicscire, The Lands of Earl Alan, Craven. It thus provides a very useful commentary on the Yorkshire folios by an author who has for long been noted for his contributions to Domesday scholarship.

In general terms, the paper contains various comments and ideas that are both interesting and stimulating. Thus it is suggested that the Summary originally gave only the names of the vills or holdings and their assessments and that the names of the holders are a postscriptal addition. Or again, it is generally agreed that the text of the Exchequer Domesday cannot have been derived from the Summary (or *vice versa*) and Welldon Finn thinks that they cannot even have had a single common origin. He adds the interesting comment (p. 16) that 'The balance of evidence suggests that the clerk who produced the Summary or its source was better acquainted with contemporary English than he who wrote the *breves* [the main text] or the draft thereof. If the Exchequer clerk was a foreigner, and the county clerk a native, as seems likely, this might account for the differences, and further suggest an early origin for the basic Summary material'.

In detail, the paper is disappointing, perhaps largely due to the unfortunate circumstances of its production. There are both obscurities and errors in the text which the author would assuredly have corrected had he lived to see the material through the press but which few others would even have realised existed. For example, the paragraph dealing with the assessments recorded in the various entries relating to Middleton on the Wolds (p. 21) is so involved that the intended meaning remains obscure even when all the details have been checked with the Domesday text. Similar checking of the details for *Scradiztorp* and Skirpenbeck set out in a table on the previous page enables what is otherwise obscure to be sorted out; but the table relating to Wilton and Lazenby immediately above is completely misleading and can only be understood after checking the details in the Domesday entries themselves. Again, it is confusing to state (p. 31) that Roger the Poitevin had acquired four manors and then quote only three place-names, though the explanation is simple – there were two manors at one of the places. It is true that Farrer's translation of the Yorkshire folios contains numerous mistakes but it is unfortunate that Welldon Finn should, in the example he chooses, state (p. 4) that Farrer's correct statement was wrong and fail to identify the error that he did make. Many of the errors in the text cannot be easily recognised. Thus the abbreviation BER was used three times not once (p. 12); in the last paragraph on page 16, 381a2 should be 381b2 and 380a1 should be 380b1; Robert Malet's claim to the land of Asa (p. 22) is entered on folio 373al–2, not on 371al–2 which is the last folio for Lincolnshire; details of the manor of Bolton (p. 30) are given on folio 301b2, not 301b1.

Each Domesday scholar must surely be allowed one individual idiosyncracy. Welldon Finn's is his habit of always writing 'wapentake' with a small letter and 'hundred' with a capital, which looks so very odd when the two are included in the one sentence. Despite its shortcomings, this account is nevertheless the work of a dedicated Domesday scholar. It is only likely to appeal to academic historians and then only to the medievalists among them. Within this group, there will be even fewer who will have the background knowledge to follow the minutiae of the details discussed.

I. S. Maxwell

Clifford B. Freeman, *Mary Simpson of Boynton Vicarage. Teacher of Ploughboys and Critic of Methodism*, East Yorkshire Local History Society, 28, 1972, pp. 44, 45p.

Mary Simpson (1820–84), who tramped at the side of ploughs and harrows talking to ploughboys in her attempt to educate them towards a fuller life, and who was a pioneer of evening teaching for those who had been deprived of education, as well as a chronicler of rural life, was in the same mould as Mary Kingsley, Florence Nightingale and Josephine Butler. Her life was lived on a relatively minor scale but in her life we can see a woman attempting to impose herself and her values upon society, in spite of all the difficulties such activity inevitably encountered.

In this pamphlet we are treated to a description of her educational activity in East Yorkshire, at Boynton and the surrounding areas, as well as to an anlysis of her rejection of the non-conformity she found among many of those she aimed to elevate. Both sections are written concisely and contain matters of local and general interest. Even so, there are some questions which remain unanswered.

What was the motivation behind her work? What made her concerned about 'the intellectual, moral and spiritual impoverishment of the ploughboys'? Was it altruism? Or was it an attempt to bring them closer into contact with society, to give them hope and thereby to cement their allegiance to that society and to encourage, if possible, a greater contribution to its progress and welfare? Was her opposition to non-conformity related to such concerns and passions, in the sense that the non-conformists were regarded as a divisive rather than a cohesive social force? These are important questions and even if they cannot be answered they deserve to be asked.

There is, finally, a further question. What made this strong willed and active woman, who assumed the responsibility of being *in loco parentis* to the ploughboys in her neighbourhood and who taught them the classic bourgeois virtues ('Hope stimulates men to diligence', or in translation for the labourer, 'Hope stirs men to work hard'), suddenly throw up her work on the death of her father in 1869? What was the domestic upheaval which followed her father's death? Should we understand that Mary Simpson, encouraging independence in others could not be independent herself? If true, this in itself is a fine ironical comment on the situation of Victorian women.

Colin Holmes

F. H. Goodyear, *Archaeological Site Science,* Heinemann Educational Books, 1971, pp. 282, illus., £3.00.

There is a growing need for a sort of archaeologist's 'Mrs. Beeton' – a compendium of well-indexed information, perhaps even set out like a series of recipes, and bound between waterproof covers on tough paper with a section for personal notes at the back. It would be pleasant, but misleading, to report that this book is a step in the right direction. Certainly some of the information contained within it is useful, especially the section on tests and treatments, the lists of chemicals and equipment, the tables comprising the scale of soil grades, the Mohs scale of hardness, and so on.

No professional is likely to use this book, and amateurs should treat it with great circumspection. Several sections, like that on archaeological prospecting or the two pages on radiocarbon dating, provide bald summaries of information available in better and more comprehensive form elsewhere. The section on C14 dating, for instance, makes no mention of the most appropriate organic materials to use, the quantities required, the costs involved, the procedures for sampling and storage, in other words all the most obvious excavators' questions; nor is there an adequate explanation of the standard deviation and its implications. Nor does an adequate bibliography save this book from the consequences of its broad approach.

The book seems curiously confused in direction, sometimes discussing the use of raw materials in antiquity, sometimes procedures for identifying them, sometimes accounts of the techniques used by off-site specialists. Frequently one echoes the little girl's first book review 'this book tells me more about the horse than I wanted to know'. One wonders why we need to know about dental formulae (without accompanying illustrations), about different dyes (hardly a problem for most field workers), the precise names for the parts of red deer antlers, or the number of bones in the human body (which are un-named, unlisted and unillustrated). Information about chemical weathering of the chalk subsoil over time, and about burial of objects by earthworms, are unaccompanied by any figures (easily available) for the rate at which this occurs.

One misses any discussion of ethics, which should be an important part of an archaeologist's companion. The book chooses examples from all parts of the world, contriving to give the impression that excavation is a technique which can be applied by anyone to solve the problems of any period or area, and that specialist knowledge is very much an optional extra. The author is vague on the subject of how far the excavator should call in scientifically-qualified experts or how far he should attempt to do laboratory work himself. Yet for the readership of this book ethical questions are vital. Archaeologists are less threatened by bulldozers (which, in a properly organised community, can be restrained, delayed or compensated) than by their own disunity. The sanctimonious attitude of the 'rescue, not research' brigade, with its curious use of military metaphors, is over-simplistic; what is needed is a coherent and agreed policy for sixth-form masters, museum curators, academics and extramural students on the correct assignment of priorities for the needs of society, of instruction, of preservation and of research.

Andrew Fleming

John Harvey, *Conservation of Buildings,* John Baker, 1972, pp. 240, illustrated, £4.75.

In this urbane and stimulating book, John Harvey undertakes three major tasks. Firstly, he provides a succinct history of the development of conservation on the Continent and in the British Isles since the middle ages. He then uses this account to set in perspective his own recommendations for the overall planning of conservation in contemporary Britain. Finally, he offers sound advice on the detailed techniques to be employed in the physical conservation and repair of individual buildings. Central to each of these three elements is Mr. Harvey's definition of 'conservation'. In essence, conservation is the retention in good repair of buildings and groups of buildings of historic or architectural interest, and their utilisation for practical functions. Such use not only prevents their fossilisation, but helps them to ward off future threats of demolition and decay. Thus conservation differs substantially from preservation, which is the maintenance of old buildings as museum pieces, unused and unchanging. Furthermore, on the evidence of this book, conservation permits quite ambitious restoration work and even alterations; in some cases in order to adapt buildings to new uses, and in others to remove 'excrescences' and re-establish the buildings' original character. It is perhaps significant that the author rarely refers to the detailed methods which he advocates as 'restoration', preferring such terms as 'repair', 'treatment', and 'rebuilding'. However, his convincing criticisms of the anti-restorationist purism of William Morris' 1877 Manifesto, and the examples of repairs and transformations shown with implied approval in his plates, make his own position clear. This reviewer would find no fault with any of the principles and detailed repair methods advocated here; they are eminently practical and convincing. Nevertheless, conservationists like Mr. Harvey have to tread a very narrow path between the self-defeating purism of Morris on the one hand, and the restorationist enthusiasm of Wyatt, Scott and Viollet-le-Duc on the other. Mr. Harvey's guides are a lifetime's practical experience of conservation, and a portfolio of confident judgments on architecture and aesthetics; he does not hesitate, for instance, to dismiss the generality of Victorian architecture up to 1890 as 'inferior'. Yet in at least two of the examples illustrated – a farmhouse at Leatherhead, and Elm Hill, Norwich – the buildings appear at first sight to have possessed rather more character and interest before their 'rescue' than after it. Mr. Harvey is surely right to appeal to all those with an interest in conservation to end their bickering about objectives and methods, but he himself has something of the self-assured, dogmatic quality which often distinguishes those who defend the heritage of the past. A more explicit recognition of the scope for genuine disagreement among conservationists would perhaps make a united front easier to achieve. On the other hand, the author's firm and highly sensible advice, and his far-sighted proposals for an integrated, national administrative structure for conservation, can only strengthen the cause which he has already done so much to promote. In brief, this is a most rewarding book, and not least for its valuable discussion of the philosophy of conservation, and of changing attitudes to it over the centuries.

ANTHONY SUTCLIFFE

JOHN HARVEY, *Early Gardening Catalogues*, Phillimore, 1972, pp. xii + 182. 12 Plates and Frontispiece. £2.25.

This publication is without parallel, for no-one has previously attempted to assemble, analyse and comment on the gardening lists of the sixteenth to nineteenth centuries. The author has succeeded in locating numerous old catalogues, many surviving only as single or extremely few copies. This archival research throws considerable light on the history of gardening in England. Not only are changing fashions in garden plants and in their availability evident, but also the catalogues give some flavour of the life and conditions of the times.

The first third of the book unfolds the story of plant lists, especially from the earliest printed trade catalogues of the seventeenth century to those of the early nineteenth century. An interesting comparison is drawn between the 1775 'pioneer' catalogue of Telfords of York and the similar one, variously dated as 1776 and 1777, of their rivals, Perfects of Pontefract, some evidence being adduced that the later list is an improved copy of the former. These catalogues were among the first to quote prices throughout (Telfords offered a single plant of *Rhododendron* for 15s, but 1000 one-year-old seedlings of Ash for 10s). Although the lists emphasize trees and shrubs, many 'bulbous' plants were also available (including 1,110 sorts of 'curious Ranunculusses'), but Chrysanthemums, Dahlias and modern Pansies had not yet been introduced into English gardening.

Appendices occupy the major part of the book; included are facsimile reproductions of the more important early catalogues. The first Appendix gives the 'Fromond' list of *c.* 1500, based on a handwritten manuscript, grouping plants by their uses. Here modern as well as botanical names have been added for virtually all of the plants; for example, Cowsloppus of Jersualem, listed under 'Herbes for Savour and beaute' is identified as Lungwort (*Pulmonaria officinalis*). An attractive feature is the reproduction of illustrations from the *Twelve Months of Flowers* issued in 1730 by Furber; this folio is the first handsomely illustrated nurseryman's catalogue.

While gardeners and botanists are likely to be those most interested in this carefully prepared and well-documented book, the general reader and historian will not be disappointed. Some reference is made to the part played by royalty in the introduction of plants; one illustration refers to a treatise extolling the virtues of Rosemary sent, with the shrub itself, by the Countess of Hainault to her daughter Philippa, queen of Edward III. Interesting insight into eighteenth-century life is sometimes afforded (e.g. by details in a letter of 1700 quoted concerning the transport of plants). All these facets show that the author has yielded much from the seemingly unpromising topic of gardening catalogues.

A. J. WILLIS

D. J. HAWKE, *The Medieval Heraldry of York Minster,* S.R. Publishers, 1971, pp. 112, illus., £1.00.

This short pocket-book gives a useful guide to identify the medieval heraldry displayed on the stonework and stained glass within York Minster. It does not include heraldry on wall paintings or on fittings (monuments, woodwork, tiles). The plan of the work is easy to follow: first the stonework is described chronologically followed by the stained glass. The final sections provide a brief historical account of the families associated with the Minster, and then the pedigrees of some families particularly associated with Yorkshire are given, together with illustrations of 22 coats of arms.

Within the obvious limits that the author has set himself, this is a useful publication, more manageable for the tourist than Dean Purey-Cust's volumes. Yet its brevity means that there is little room for discussion, and the stained glass clearly needs more elucidation than is provided here. The more complicated arms are not illustrated and sometimes not adequately described. There are rather more printing errors than there should be, and on the illustrations Trehous is not correctly titled and the martlets of Valence have become amorphous squiggles. More cross-references could have been given from the illustrations back to the main text. The suggestions on the coat of Ulphus are interesting and merit further research among seals and manuscripts to afford possible verification. Despite its high price this handbook should sell well among visitors to the restored Minster.

LAWRENCE BUTLER

ALAN KING, *Early Pennine Settlement, A Field Study*, Clapham: Dalesman Publishing Co., 1970, pp. 96, illustrated, 55p.

This survey of landscape evolution publishes much new evidence which results from the author's study of the area, and considers the archaeology of the region alongside its environment. The volume is well illustrated, although the method of binding mars some maps and photographs, and students will find it particularly valuable for the copious references. The discussions of settlements and excavations are clear and concise, and though most of the text is concerned with the Craven area, it can be welcomed as a new contribution to the study of the Pennines.

F. A. Aberg

Barry M. Marsden, *Discovering Regional Archaeology – North Eastern England*, Tring: Shire Publications, 1971, pp. 64, illus., 30p.

This brief volume is designed to act as a guide to prehistoric, Roman and Anglo-Saxon antiquities, with an outline distribution map of sites for each county. The information on the location and nature of each monument is short, but the series to which this book belongs seems to aim at simplicity and low cost to achieve wide distribution. One hopes that it will achieve these aims, though perhaps there should be more guidance to further reading and more care in the selection of sites. It is misleading in one or two instances, and from the text one could be led to assume that all the sites are equally well preserved. The fourth-century signal station at Huntcliff fell into the North Sea some years ago.

F. A. Aberg

John Marshall, *The Lancashire and Yorkshire Railway,* 3 vols., David and Charles, 1969–72, pp. 288, 327 and 293, illustrated, £2.75, £3.15 and £3.50.

'Of all the major British railway companies', writes Mr. Marshall, 'the Lancashire and Yorkshire Railway was at once the most complex and the least colourful'. Although it ranked only eleventh among the railways of the pre-grouping era, its complexity lay partly in its early history, partly in the populous industrial areas it served, and partly in its many large-scale engineering works.

The railway's origin can be traced to 1831–2, when the Manchester, Bolton and Bury Canal Company in effect converted itself into a railway company, though it was to the connection between Manchester and Leeds – authorised in 1836 – that the railway ultimately owed its county title. But the story of the amalgamations which produced the 'L. & Y.' is too cumbersome to relate here. Fortunately the author deals with it most clearly. At its fullest extent the L. & Y. covered some 600 route-miles and catered for a rich variety of traffic from Fleetwood fish to Danish dairy products and from commuter services in the Manchester conurbation to seaside excursions to Southport or Blackpool. It also developed its own shipping fleets based (mainly) on Goole and Fleetwood. In a sense the railway could claim that it stretched from Copenhagen or Hamburg in the east to Belfast or Drogheda in the west.

Mr. Marshall is a careful guide to the growth of this most interesting railway. Not only does he provide a detailed chronology of developments; he also includes comment on the locomotive and carriage works, the maritime investment and other ancillary activities. And for those fascinated by locomotives and rolling stock, volume 3 (which is devoted to these items) provides a veritable feast. Where one would have liked greater emphasis is on the traffic patterns themselves and their relationship to the kind of area served – which was after all a region of tremendous importance in the economic history of the nineteenth and early twentieth centuries. Again, business historians looking for any detailed discussion of commercial policy and pricing will not find very much in these pages. Yet Mr. Marshall has done us all a great service in unravelling the many strands of a complex story. If we must admit that the locomotives of his chosen railway lacked colour (though not elegance), we must concede that the company itself was far from drab. Assuredly its shareholders would have agreed; for the railway never failed to pay a dividend of at least three per cent and in fact usually did rather better. Social and economic historians may well want to know much more about this company and its managers and employees, but they will certainly have to start with Mr. Marshall's work.

Baron F. Duckham

Margaret F. M. Mulgrew, (Ed.), *The Parish Register of St. Mary, Castlegate, York, 1604–1837,* Yorkshire Archaeological Society, Parish Register Section, CXXXIV, CXXXVI, 1970, 1972, pp. xi + 187; viii + 371, £3.00 and £6.00.

The issue of this register is notable: for the first time one of the city registers of York has been printed down to 1837 (Acomb, a rural parish now incorporated, was printed to 1837 under the editorship of the late Harold Richardson as vol. CXXIX in 1966). The parish was one of the more important of central York and had a large population. Apart from the normal entries the register includes many references to prisoners in the Castle (an extra-parochial area). For these entries and for notes on outstanding families of the parish, reference should also be made to the *Yorkshire Archaeological Journal,* XV (1900), pp. 142–98, and XXV (1920), pp. 437–41, as pointed out in the introduction.

This edition makes full use of all that survives of the registers and also of the Archbishop's transcripts, which supply the Marriages 1773–1812 (except for four lost years, 1774, 1775, 1781 and 1784), and the whole of the registers for 1813–1837. It is a precise text including extraneous matter such as the table of Fees of 1692, a note on the Ousegate Fire of 1694 (CXXXIV, pp. 26, 159); and the Terriers of 1781 and 1809 (CXXXVI, pp. 110–11, 195–6). The first volume has a valuable historical introduction and a list of the Rectors.

The indexes do *not* include the married surnames of brides, and some abbreviations are ambiguous (e.g. 'Tho' includes both Thomas and Thomasin). A regrettable omission is an index of occupations: that in the Acomb volume, though occupying only two pages, is of inestimable value to the user. In the light of over 40 years' experience of using registers this reviewer questions whether research would not be better served if future transcripts were to be set out in tabular form for easy consultation (e.g. Baptisms 1738) May 14 HOLMES Sarah d Thomas, Barber.

John H. Harvey

Elisabeth Okasha, *Hand-list of Anglo-Saxon Non-runic Inscriptions*, Cambridge University Press, 1971, pp. xvi + 160, 48 plates, 2 maps, £11.00.

Dr. Okasha's *Hand-list* is an extremely useful work of reference for all who are studying Anglo-Saxon sculpture. It is also a valuable tool for linguists and numismatists. The importance of the work is that here are collected all the inscriptions in Anglo-Saxon or Old English, amply illustrated and with full references. Latin inscriptions found in an Old English speaking area and those with an Old English personal name are also included. Where the stone or object additionally bears a runic inscription, a translation of this is given. The inscriptions occur on memorial stones, crosses, sundials, rings, brooches and reliquaries. Coins and seals are deliberately omitted because they were produced in multiple copies. Each of the 158 objects listed is fully described with its find-spot, present site, size, purpose and date. Only three inscriptions can be securely dated before *c.* 700 and the majority are after A.D. 900

In a brief introduction the author draws attention to the high proportion of inscribed stones in the North (80% of her total); Anglo-Saxon carved stones (72%) and Old English runic inscriptions are equally numerous in the northern counties. The contrast is made between the high survival rate of decorated stones in the North and the greater number of church structures in the South. The geological explanation she offers is not entirely convincing and does not take sufficient account of Jope's work (*Medieval Archaeology,* VIII, 1964).

The numbers of crosses and memorial stones from Yorkshire and the other northern counties are swelled by the large collections from four monastic cemeteries (York, Whitby, Hartlepool and Lindisfarne). No inscriptions possess literary merit except for the runic *Dream of the Rood* at Ruthwell, and the only stones with particular historical significance are the dedication tablets and sundials at Aldbrough, Jarrow, Kirkdale and St. Mary Castlegate at York. Whereas forty inscriptions survive on stone in Yorkshire, there are only two non-stone inscribed objects: the gold rings from Driffield and Sherburn-in-Elmet. This contrasts with the more numerous precious metal and ivory objects found in southern England.

The majority of the photographs are of very high quality, but three in Yorkshire are poor (Dewsbury 31, Whitby 122, and York 146). In her reading of the inscriptions Dr. Okasha errs on the cautious side, a most commendable trait when earlier antiquarians used their imaginations more freely to help their readings and reconstructions. While this caution prevents her from reading indistinct letters too confidently, it also inhibits her from attempting to read the partially preserved letters, as on Canterbury 22 or Yarm 145, where her guidance would have been helpful. The slab Whitby 132 may possibly be seen as a pilgrim's dedication on an altar, as is known from Ballavarkish, Bride, Isle of Man or Vouneuil-sous-Biard near Poitiers.

Lawrence Butler

H. N. Pobjoy, *A History of Emley*, Driffield: Ridings Publishing Co., 1970, pp. viii + 142, £1.25.

This work, we are told, has been published by Mr. Pobjoy's widow as a memorial to his nine years' incumbency of Emley; it is a pity that private respect and sentiment necessitate such a public act as book publication, for the work is indeed a monument: to a style of local history that is dated and dead. Once there were the two nations, the amateur and the professional local historian, and now there is one: this book comes from the days of division. It is made up of contributions for the *Emley Gazette,* few paragraphs longer than six lines, continuously broken up by bold paragraph headings of unbelievable bathos ('Emley Unlucky Again' sc. no Roman remains); no quotations have references; national and local history are harnessed together with the usual 'must have' and 'would have'; documents, if used, are not acknowledged to an identifiable source and page, and when there does seem to be a rare item (such as the original Census return of 1801) no-one would know where to look for it beyond the 'we have'. There are many line-illustrations, often introduced at incongruous places and without point (e.g. Anglo-Saxon houses between a paragraph on pee-wits and one on mining terms); the plates are very much better, particularly those of the Saviles, patrons of Emley. The book may acquire a rarity value among collectors of oddities through having its right-hand pages numbered (from 86 onwards) in a series of even numbers, thus making it clear that publisher and printer share some of the author's amateurism.

M. W. Beresford

Bernard Rackham, *Medieval English Pottery,* 2nd edition, revised by J. G. Hurst, Faber 1972, pp. xvi + 40, 8 colour and 96 black and white full page plates, £6.50.

It is a regrettable aspect of Medieval archaeology that there is as yet no systematic guide to the ceramics of the period. This new edition of Rackham's pioneer work, valuable as it is, does not set out to fill the need, for it makes no major additions or alterations to the text, retaining the emphasis of the original on the aesthetic qualities of medieval pottery rather than its chronology or pattern of kiln distribution. Certain small changes are made in the main text in the interests of accuracy, footnotes are brought up to date, the bibliography is largely replaced, four new colour plates are added, and, perhaps the most valuable of the changes, the captions of all the 96 black and white plates are completely re-cast, incorporating a good deal of careful work in identifying the kilns where the pieces portrayed were made. As Rackham's choice of illustrations reflected the emphases of his text his selection has inevitably been left behind by the results of more recent research: some types now seen to be of major importance receive less emphasis than they deserve, others are perhaps over-illustrated. Perhaps some repeats, such as the copies of Rouen jugs (Plates 78, 79, 90) could have given way for new plates of material which Rackham omitted, for instance 15th-century bung-holed jars and decorated Cistercian-ware cups. Even so, in many ways, Rackham's selection has stood up remarkably well, bearing in mind the state of knowledge when he wrote. There have of course been considerable advances in the accuracy of dating in the intervening years, and the layout of plates is now even less chronologically ordered than when it appeared in 1948.

Thus this edition is welcome so far as it goes, but the insertions and the new bibliography give a tantalising glimpse of the wealth of new knowledge which awaits ordered publication. It could of course be argued that with the constant appearance of information about kiln sites, their dating and their products, any attempt at a comprehensive guide would be out of date before it was printed, and that anyone seriously interested should rely on reports in the journals. However, the bibliography shows how scattered these are, and the argument for a survey to act as a starting point is surely strong when no such base of information exists. Mr. Hurst himself, in his contribution to *Deserted Medieval Villages,* (see p. 217 above), shows that the risk of obsolescence can be faced, and it is to be hoped that he will produce a survey of current knowledge of pottery before too long.

We must assume from the pricing of this book that the publishers are not expecting any quantity of private sales, and have printed only for a limited institutional market. Even so it is doubtful how many librarians will wish to pay this price for this degree of revision, assuming they have the original in their stock. It would perhaps have been preferable from the user's point of view if the new information had been incorporated in a revision article in *Medieval Archaeology.*

DAVID CROSSLEY

ARTHUR RAISTRICK, *Industrial Archaeology: an Historical Study*, Eyre Methuen, 1972, pp. xii + 314, £5.50.

All of us with an interest in Industrial Archaeology become, almost of necessity, specialists in our own particular field; we come from many disciplines and many backgrounds and our numbers are steadily increasing but we are, in the main, drawn by the appeal of some specific type of industrial activity or form of plant or class of prime mover. It is salutary, therefore, to study the broad-based picture as here presented, derived from a lifetime of experience, to place our own individual limited interests in perspective. It is obviously with some diffidence that one presumes to review such a work – particularly having had the privilege of sharing the author's enthusiasm, which is still youthful after fifty or more years of study, and having attempted to keep up with him striding across his beloved Grassington moors at a pace which taxes those half his age.

This volume, then, is a general discussion on Industrial Archaeology and very properly opens with a consideration of the term itself. The remainder, like Gaul, is in three parts. Part I deals with the materials and field evidence of Industrial Archaeology. This is considered under the headings of metals and their ores; non-metallic raw materials (coal, stone, limestone and so on) and the manufactures based on them (bricks, pottery, glass, cement and the chemical industries); agricultural products (including leather and textiles); power and fuel; transport; and finally accommodation, covering buildings and structures.

Part II presents a chronological survey of Industrial Archaeology in this country. This moves from prehistory and Roman times, through the Dark Ages and the Mediaeval period to the prelude to the Industrial Revolution, this latter then being dealt with in two sections which cover the eighteenth and nineteenth centuries respectively.

Part III discusses the place of museums in the sphere of Industrial Archaeology and the various tasks of preservation, restoration and the recording of evidence.

The viewpoint is, of course, a personal one but it is logical and is the fruit of a long and rich experience superimposed upon a scientific training. As such, the book deserves a wide publicity, particularly among the younger students of the subject, whatever their ages, who could with advantage be persuaded by it to consider their own particular interests in a wider context. Obviously there are small areas where the specialist will feel the author to be rather less well informed; this is in the nature of things. It does not detract in any real sense from the value of this study; it is fair to say that the author himself would probably be the first to recognise this and would welcome any enlightenment which could be forthcoming. The overall impression is of a stimulating and enjoyable volume and that it will be useful as a reference for the future.

K. C. BARRACLOUGH

ELEANOR M. READER, *Broomfleet and Faxfleet: two townships through two thousand years*, York: Ebor Press, 1972, pp. 68, illus., 50p.

The progress of these two villages has always been closely bound up with the drainage and reclamation of the low-lying grounds between the notorious Walling Fen and the River Humber. Therein lies their special interest, for in other respects, especially in more recent times, their history mirrors that of many another isolated East Riding village. A flourishing Romano-British settlement on the river bank was destroyed by flooding in the 4th century, and it was Scandinavian settlers who recommenced the struggle against tidal water from the Humber and land-water draining from the north. Several religious houses played a leading part in raising river banks and cutting drains in the Middle Ages, but not until the 18th century was Walling Fen finally conquered, and 'derelict' saltmarsh was still being taken in from the Humber in the 20th century. Pottery and brick making, from Roman times onwards, and the presence of the Market Weighton canal add other distinctive themes to the story. The book is admirably written and the facts presented in erudite fashion. Miss Reader does not hesitate, moreover, to bring her communities to life by careful conjecture, and several good maps illustrate the text.

K. J. ALLISON

P. ROWLEY (Ed.), *The Parish Register of Oswaldkirk, 1538–1837*, Yorkshire Archaeological Society Parish Register Section, vol. 135, 1970, pp. 166, £3.00.

Oswaldkirk parish register is nearly complete for the three hundred years here transcribed and published. The sixteenth-century entries are in fact transcripts made about 1600 and then preserved and there is the usual gap in the Civil War period. The Rev. Rowley, the incumbent, has done an excellent job of editing these registers and anyone particularly interested in the area between York and Helmsley owes him a debt of gratitude. Oswaldkirk is, and always has been a very small place, overshadowed by Ampleforth and Coxwold, and the annual entries are brief, but a fair amount of information about occupation and status is contained in the later registers so that this volume possesses much more than antiquarian interest.

B. A. HOLDERNESS

P. M. TILLOTT (Ed.), *The Parish Register of Braithwell, Vol. I, 1559–1774; Vols. II–IV, 1754–1837,* Yorkshire Archeological Society Parish Register Section, Vols. 132–133, 1969, pp. 197, 133, £3.00 each.

This edition of the registers of Braithwell makes a welcome addition to the excellent series of Yorkshire parish registers now in print. Braithwell is a parish near Rotherham in an area not well served by previous publications. It was moreover a parish increasingly affected by the process of industrialization on the fringes of the Sheffield area with an apparently diverse occupational composition at the time when such information is provided by the registers. Particularly interesting is the evidence of an attempted improvement in registration in 1777 when details of the origins of both parents at a baptism were required on a *pro forma* issued by Archbishop Markham. This improvement at Braithwell did not endure for long but even for this short period the new system helps to fill out the usually scanty information available for researchers into parish registers. In addition to the register data there is information about the incumbent of the parish, parish charities, terriers of 1786 and 1905 and notes on church repairs. In all the volumes are excellently edited and clearly presented.

B. A. HOLDERNESS

Also received

CANON GERALD HOLLIS, *Thomas Rotherham – Archbishop of York and Chancellor of England*, Rotherham Municipal Museum and Art Gallery, 1973, pp. 11, 20p.

All communication relative to the Editorial side of the **Journal** should be addressed to the Hon. Editor, D. W. CROSSLEY, B.A., F.S.A., Dept. of Economic History, The University, Sheffield, S10 2TN, from whom lists of conventions should be obtained by intending contributors.

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